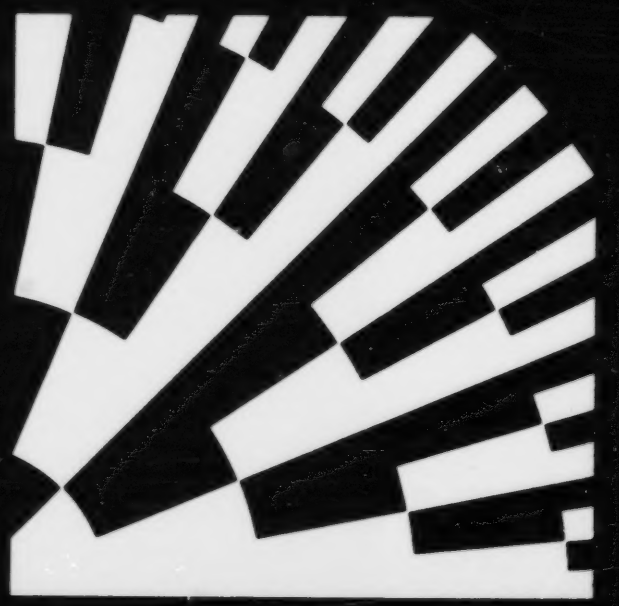
Consumer Problems in the Automobile Repair Industry: An Exploratory Study

Stephen E. Margolis



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CONSUMER PROBLEMS IN THE AUTOMOBILE REPAIR INDUSTRY: AN EXPLORATORY STUDY

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The analysis and conclusions of this study do not necessarily reflect the views of the Department.

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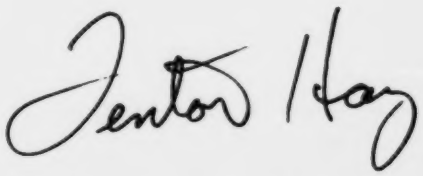
Any errors remain the responsibility of the author. The author's institutional affiliation is listed for purposes of identification only. North Carolina State University bears no responsibility for this report.

FOREWORD

The Policy Research, Analysis and Liaison Directorate of Consumer and Corporate Affairs Canada conducts research in a wide variety of fields. These projects are funded in order to encourage outside research with relevance to policy formulation, and the results are often published. In such a way, it is possible to encourage further work in these areas, and to stimulate discussion of the recommendations and/or conclusions contained in the reports.

In 1980, the Department published a study prepared by Stephen B. Ash, entitled Consumer Satisfaction, Dissatisfaction and Complaining Behaviour: Major Findings and Directions for Action. In the Ash study, based on a national survey, automobile repair was identified as the most important area of consumer dissatisfaction. Twenty-seven per cent of the survey respondents who reported experience with automobile repairs also expressed some degree of dissatisfaction. Of that group, 43 per cent believed that their dissatisfaction was associated with some financial loss. Many newspapers and public interest groups have undertaken experiments, the results of which usually underscore the perception of poor performance by this industry.

This study by Professor Margolis, unlike traditional studies in the area, analyzes the automobile repair market from the perspective of the economics of industrial organization. The author's analytical approach to the problem makes for very interesting and thought-provoking reading. It should be noted that the research for and writing of this study were completed by September 1980. Thus the sections that deal with legal aspects of the auto repair industry reflect the laws as they stood at that time. The conclusions presented herein are those of the author alone and do not necessarily reflect an official position of the Department.



Dr. Fenton Hay
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SUMMARY

The automobile repair industry is perceived by many observers as a likely source of consumer losses. A recent survey of consumer satisfaction and dissatisfaction in Canada showed automobile repair to be the most important source of dissatisfaction for Canadian consumers.[1] Experimental studies in the United States have been interpreted to imply that 40-50 per cent of all consumer expenditure on auto repair is wasted.[2]

These circumstances have led Consumer and Corporate Affairs Canada to commission research on the economics of the automobile repair industry. This first such study is therefore quite general in its coverage. It is anticipated that this work will contribute to the identification of more specific issues for future research.

The potential for a welfare loss in this industry arises out of the consumer's reliance on the seller to determine, in part, the buyer's wants. This condition is specifically contrary to the usual informational assumptions of the competitive market system as it is characterized in welfare economics. Under certain conditions, producers may have an incentive to engage in deceptive practices. However, institutional arrangements or consumer practices may arise that minimize consumer losses from such activities. Deceptive practices are divided here into two categories and analyzed separately. The first category is fraud, in which a repair shop recommends and bills for excessive repairs that are not performed. The second is overprescription, where all recommended repairs are performed, but where more repairs are recommended than would be optimal for the consumer, given prices, preferences and the condition of the automobile.

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1. Stephen B. Ash, Consumer Satisfaction, Dissatisfaction and Complaining Behaviour: Major Findings and Directions for Action (Ottawa: Consumer and Corporate Affairs Canada, 1980).

2. See, for example, U.S. Department of Transportation, U.S. Department of Transportation News, May 7, 1979, and Consumers Union, "How Fair Are Repair Costs?" Consumer Reports 44, no. 4 (April 1979): 196-97.

Chapter I provides a brief review of the background to this study. Chapter II presents analytical models of problems in the automobile repair industry and related discussions. The key results of Chapter II are the following:

1. An optimal or ideal repair cannot be defined simply in terms of technical effects. The optimal repair must be defined in terms of consumer preferences, technical possibilities, the information held by the mechanic and the costs of obtaining information. The course of action to correct a defect which would be optimal with perfect information may be inefficient once the cost of obtaining information is taken into account.

2. An incentive for overprescription is not present in either the simple monopoly or competitive cases. Some elements of both monopoly and competition are required for overprescription to be advantageous for the firm. In the case of monopolistic competition, overprescription results in demand shifting. In that case, however, other demand-shifting characteristics, in particular reputation, become a concern. Where consumers are knowledgeable and where repeat buying is important, we should expect the reputation effect to be large.

3. The loss due to overprescription is not the full amount charged for services beyond the ideal repair, but is the difference between the consumer's hypothetical valuation of the extra service under full information and the amount charged for these repairs.

4. The effects of fraud are difficult to evaluate and depend on the competitiveness of the market.

5. Flat-rate manuals are probably an inappropriate target for regulation. They convey certain benefits by allowing for binding estimates before repairs begin. Any systematic overstatement in required repair time will be compensated by an adjustment in price. The popular criticism of these manuals ignores the price adjustment that will occur unless some collusion is present.

6. There is no obvious incentive for manufacturers to overprescribe routine maintenance. Such overprescription could be sustained only under very unusual circumstances. Further, information about routine maintenance is available from independent sources.

Chapter III presents empirical results aimed at evaluating consumer losses due to misleading practices in this industry. Two family expenditure surveys (Statistics Canada) are used to provide an estimate of expenditures per automobile by Canadians.[3] These expenditures are adjusted to reflect the value added by "do-it-yourself" mechanics. Data on home production are taken from the Panel Study of Income Dynamics.[4] Final adjustments are made to express all values in 1974 Canadian dollars. The expenditure for repair and maintenance, excluding replacement tires, was $213 per year in both the 1969 and 1974 surveys (1974 dollars, in each case). Expenditures per mile were 2.45¢ in 1969 and 2.30¢ in 1974.[5]

To evaluate these expenditures a U.S. engineering-type study was used as a basis for comparison.[6] That study, by the U.S. Department of Transportation, constructs the costs of buying, maintaining and driving an automobile for ten years and 100,000 miles. Because the Canadian sample was not composed of equal numbers of cars of every age up to ten years, a weighted average of the predicted expenditures was computed. A weighted average is also used to reflect the mix of size classes of cars in the Canadian fleet. Weights used reflect the distribution, by model year, of the family expenditure surveys. The result is that the expenditures predicted by the engineering study, when adjusted to reflect the characteristics of the Canadian automobile fleet, are not noticeably different from actual Canadian expenditures. Predicted expenditures are $234 per year or 2.38¢ per mile for 1969 and $230 per year or 2.19¢ per mile in 1974 (again all values are 1974 Canadian dollars). Using

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3. Statistics Canada, Urban Family Expenditure 1974, cat. no. 62-544 (Ottawa, 1977); idem, Family Expenditure in Canada 1969: Volume I All Canada: Urban and Rural, cat. no. 62-535E (Ottawa, 1973).

4. University of Michigan Survey Research Center, Panel Study of Income Dynamics (Ann Arbor: Survey Research Center, 1974).

5. The use of imperial units of measurement in this study reflects the data base used. For the reader who wishes to determine the metric values, a Table of Conversion has been provided at the end of the study.

6. U.S. Department of Transportation, Federal Highway Administration, Cost of Owning and Operating an Automobile 1976 (Washington, D.C.: Government Printing Office, 1978).

costs per mile as the basis for comparison, overexpenditure amounted to 3 per cent in 1969 and 5 per cent in 1974. Several precautions in interpreting these data are presented.

Experimental studies, performed mostly in the United States, provide results that conflict sharply with the results mentioned above. These experiments consist of introducing a single known fault into an automobile, then contacting repair shops for estimates. The difference between recommended repairs and the repairs necessary to correct the known fault have been interpreted as waste. It is argued that these studies are faulty for the following reasons:

1. Interpretations that "extra" repairs are inefficient are faulty. Repairs that are "wrong" in the world of artificially induced faults may be correct in the real world, where parts failures may be correlated. If diagnostics and on-the-road failures are costly, grouped replacement of components may be efficient, given real world circumstances.

2. The experience of a consumer who picks a shop at random will not be representative of consumer transactions in general. The consumer will normally seek recommendations from others or will patronize firms with which the consumer has a long business relationship.

3. The experiments specify a passive role for the consumer. A real consumer may provide supplementary information to the mechanic or may simply reject the mechanic's diagnosis entirely if the prescribed repairs are excessive.

Chapter IV discusses the legal and market institutions that apply to automobile repair and the effects of existing provincial laws. Business practices legislation and compulsory certification of mechanics are the major instruments of control in Canada. A review of recent legal innovation in the United States shows disclosure laws to be a popular measure there. Disclosure laws require that specific information be provided to the consumer. A common provision of these statutes is a requirement that the shop provide a binding estimate before repairs begin. It is conjectured that many shops conform to the intent of disclosure laws even in the absence of these laws. If that were the case, the costs of disclosure laws would not be large. Appendix A provides a detailed survey of provincial laws pertaining to auto repair.

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INTRODUCTION

This report presents the results of research on the economics of automobile repair. At the time the research was commissioned there was an expectation that the automobile repair industry was a source of consumer losses, but fairly little information existed on the magnitude or nature of the problem. As a result, the research contemplated was quite broad, dealing with the industry in general rather than any specific problem area. Negotiation and discussion have led to some narrowing of the subject so that warrantees, new car manufacturers, parts suppliers, insurance companies and body repairers are not specifically discussed. The conceptual and empirical formulations presented here have application to all of what is, for some purposes, referred to as mechanical repair of automobiles. It is anticipated that one result of this first inquiry will be the identification of more specific research issues for future work.

This report is constructed as follows. Chapter I presents some of the background to this study, including previous research and the impetus given to the present undertaking by Consumer and Corporate Affairs Canada. Chapter II presents conceptual models of problems in the automobile repair industry. These are microeconomic models that explore the effects of the consumer's reliance on the producer for advice about the amount of service to consume. The problems that may arise have been categorized here either as "fraud" or "overprescription." In the case of fraud, the producer recommends and bills for services that are not necessary and not performed. Overprescription is used to denote the practice in which the repair firm recommends and bills for a quantity of repair larger than the quantity that would be chosen by a consumer with full information. Chapter III presents empirical results on auto repair. The empirical intent is simply to measure the actual expenditures of Canadians on auto repair and to compare them with an appropriate standard. This will allow some consideration of whether consumers spend more on auto repair than is necessary to obtain reasonable performance, reliability and longevity from their automobiles. Chapter IV is a survey of the legal institutions that apply to this industry. A discussion of the kinds of regulation now in effect in Canada is followed by a general survey of recent legal initiatives in the United States. The economic effects of the major types of government action pertaining to auto repair are presented as well. (Details regarding provincial laws that affect auto repair can be found in Appendix A.) Finally, Chapter V presents recommendations for policy and future research.

Chapter I

BACKGROUND

In 1977, Canadians registered just over 9.5 million passenger vehicles. Based on estimates presented below, private nonbusiness expenditures on auto repair in 1977 were almost $3 billion.

There are a number of reasons for concern about the performance of the automobile repair industry. Many consumers have little understanding of the workings of their automobiles and as a result will rely upon the repair firm for advice. Even after repairs are completed, the consumer may be unable to assess the effects of the individual components of the repair bundle that he has bought. For many repairs, such as adjustments, even the knowledgeable consumer may be unable to assess whether the repair action was performed at all. At the same time, the repair firm may have an incentive to recommend more repairs than are ideal given the interests of the consumer and the condition of the automobile.

In a survey of consumer satisfaction and dissatisfaction, also commissioned by Consumer and Corporate Affairs Canada, automobile repair was identified as the most important area of consumer dissatisfaction.[1] In that national survey, of all respondents reporting experience regarding automobile repairs, 27 per cent reported some degree of dissatisfaction. Twelve per cent of respondents reported that auto repairs were the consumption item that for them created greatest dissatisfaction. Of those expressing dissatisfaction with the auto repair industry, 43 per cent believed that they had suffered some financial loss in their dealings with this industry.

In spite of widespread suspicions that this industry performs poorly, there has been fairly little research on this topic by economists. A survey of economics and related journals yielded only two articles directly on this

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1. Stephen B. Ash, Consumer Satisfaction, Dissatisfaction and Complaining Behaviour: Major Findings and Directions for Action (Ottawa: Consumer and Corporate Affairs Canada, 1980).

subject (Darby and Karni, and Webbink).[2] A number of studies have been conducted in the United States for various government agencies.[3] These studies are, with only a few exceptions, experimental in nature. (One exception is a computer simulation model; however, that model uses the experimental results for calibration.) The results of the experimental studies are quite striking and are widely interpreted to imply extensive consumer losses in auto repair. For example, one U.S. study reports that 53 per cent of U.S. expenditures on automobile repair are wasted.[4] Similar studies set the amount of waste at 40-50 per cent of total expenditures (a critical review of these experiments is presented in Chapter III).

Allegations of poor performance in this industry have become well publicized. A recent Consumer Reports annual automobile issue restates the results of the experimental studies mentioned above.[5] A former chairman of the U.S. Federal Trade Commission has published a claim that between 1.5 and 2 per cent of U.S. disposable income is wasted in the automobile repair industry.[6] U.S. Congressional Hearings presented further evidence, largely episodic, of misdeeds by the practitioners of automobile

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2. M. Darby and E. Karni, "Free Competition and the Optimal Amount of Fraud," Journal of Law and Economics 16, no. 1 (April 1973): 67-88. D.W. Webbink, "Automobile Repair: Does Regulation or Consumer Information Matter?" Journal of Consumer Research 5, no. 3 (December 1978): 206-09.

3. See, for example, U.S. Department of Transportation, Program Support for the Motor Vehicle Inspection Demonstration (Washington, D.C.: Government Printing Office, 1977); idem, U.S. Department of Transportation News, May 7, 1979.

4. U.S. Department of Transportation News, May 7, 1979.

5. Consumers Union, "How Fair Are Repair Costs?" Consumer Reports 44, no. 4 (April 1979): 196-97.

6. Michael Pertschuk, "Consumer Automobile Problems," Uniform Commercial Code Law Journal 11 (1979): 145-54.

repair.[7] The topic has also received extensive coverage in local newspapers and on television "magazine" format type shows such as "Sixty Minutes." This publicity may have contributed to the public's negative perception of the performance of automobile repair firms.

This study departs from previous work in a number of ways. First, the analysis is primarily that of economics, a characteristic shared with only the aforementioned studies by Darby and Karni and, to a lesser extent, Webbink. No previous economic study, to the author's knowledge, has provided any empirical analysis. In contrast with previous empirical studies of this industry, the present work uses information on the expenditures of real consumers.

It is anticipated that this study may contribute to the formulation of both policy and future research. With regard to policy, the role of the federal government is quite circumscribed. Regulation of this industry has been almost entirely a provincial matter. However, the concerns regarding automobile repair may have implications regarding manufacturers of automobiles and parts, matters that have involved the federal government. Also, because the provincial institutions pertaining to auto repair are often very similar, an analysis of this industry may be appropriately undertaken by the federal government.

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7. U.S. Congress, Senate Judiciary Committee, Automotive Repair Industry, Part 1-2, Hearings of the 90th Cong., 2d sess., pursuant to Senate Resolution 233, 1968, Senate Resolution 40, 1969.

Chapter II

ECONOMIC ANALYSIS OF PROBLEMS IN THE AUTOMOBILE REPAIR INDUSTRY

Introduction

This chapter provides an analytical framework that is essential to the empirical and policy discussions that follow. Simple microeconomics are exploited in order to provide some basic intuition on the nature of the problems that affect the auto repair industry. Though much of the economic reasoning offered is quite elementary, the subsequent analysis of both data and institutions will rely heavily on this chapter. The conclusions drawn in this study differ in significant ways from those drawn elsewhere, an outcome that is, in part, due to the theoretical considerations presented here.

This discussion focusses on deceptive practices. As the complexity of the automobile makes it costly for each consumer to understand its workings fully, and thus the benefits to be had from any given repair purchase, the consumer will therefore rely on expert advice in making a purchase decision. This characteristic of auto repair in itself is not a problem; we rely on critics to recommend movies, consumer magazines to recommend blenders, interior decorators to recommend colours, etc. However, in the automobile repair industry it is usually efficient to have services provided in conjunction with diagnosis. The inspection and disassembly required to diagnose a fault may be a large part of the costs of repair. This gives rise to a case in which the person providing the diagnosis may have an incentive to provide incorrect information. A second characteristic of automobile repair is that the consumer may never know that he has been deceived. If parts are replaced prematurely, the consumer will witness only proper functioning of the automobile. For some repairs, the shop could fail to perform the services entirely and escape detection. As a result, the usual incentives of repeat buying and word-of-mouth advertising may not have the usual, and generally desirable, effects.

The analysis that follows has application to a much broader class of commodities than just auto repair. The first characteristic, the joint production of advice and service, is pervasive. The paint store, the restaurant, the university, the doctor and so on are all organizations that are called on to provide advice about the very commodity

they produce. There are several reasons why a consumer might choose to accept recommendations regarding his consumption, from the firm he buys from. Information may be specific to the producer -- as in the case of a restaurant waiter making recommendations from the menu or a college counsellor suggesting course work. Alternatively, the cost of seeking advice separately may just be too high, as in the repair case. Either case may prompt deceptive statements. The second characteristic, no discovery of effect, is much less common. We will know how good the college course work was after we have finished with it. But the consumer is unlikely to determine, for example, whether a valve adjustment was really useful.

A dichotomy that has proven helpful in constructing this analysis is that between overprescription and simple fraud. In the case of overprescription, the repair agency recommends repairs, for one reason or another, that exceed the amount of repair that would be "optimal." (A careful definition of an optimal repair follows.) If the consumer agrees to the prescribed repairs, the garage performs these repairs and bills accordingly. In the case of fraud, the garage recommends some repair beyond that which is necessary to obtain satisfactory performance from the automobile. In this case, if the consumer agrees to the recommended repairs, the garage will not perform the "extra" repairs but will bill the customer for them. Presumably fraud would be confined to those repairs which leave no evidence that is readily detectable by the consumer.

In either case the consumer is deceived and pays for a quantity of repair that is too large. In the case of overprescription, the problem could result from attempts to increase profits or it could result from ignorance, overzealousness or a misunderstanding of the consumer's intentions for the automobile. There is little room for speculation as to the motivation for fraud. From an analytical point of view, the important difference between these two market problems is that in the case of overprescription the extra repairs use resources, while in the case of fraud there is only a transfer of wealth. Since no extra repairs are produced under fraud, there are no extra production costs imposed on the shop. The two practices are discussed separately below.

An Optimal Repair

Our discussion of the automobile repair industry will require frequent reference to the repair that the consumer "should" purchase, or the repair that is "needed."

While these notions might appear to be perfectly straightforward, it is important to be fairly specific about the terminology used. Economists often object to the term "need" because its use presumes that the issue of allocation is beyond discussion. In this study, as is probably the case in daily use, the term "need" is merely a shorthand: the needed repair is simply the economically optimal one.

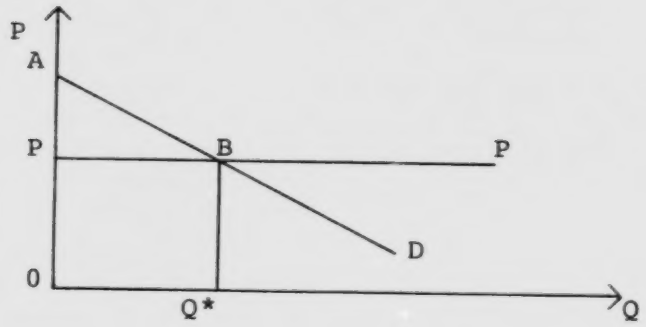
The notion of the economically optimal repair is not trivial. An abstract definition is fairly easy to provide: the economically optimal repair is the one that the consumer would contract for if he had all the information a competent mechanic might reasonably be assumed to possess at each stage of the repair. This information includes information about the cost of obtaining further information. The difficulties arise in making such a definition operational. Before considering that issue though, it may be useful to explain the definition offered here.

The basic notion offered in this definition is that the optimal repair is the one that the consumer would choose under conditions of complete information. If the consumer had complete information about the benefits of any action, then automobile repair is like any other commodity, and the consumer's private decisions may be taken to reflect the consumer's best interest. Under this complete-information assumption, it is appropriate to specify a demand function for repair and to treat the optimal quantity of repair as the one that occurs at the intersection of the demand curve and the price of repair. This is shown in Figure 1, with the optimal repair shown as Q^*. The representation of the demand curve as a downward sloping line reflects conventional economic assumptions. In the specific case of auto repair, however, the shape reflects the fact that consumers would tend to purchase only the most crucial repairs at very high prices, and would choose subsequently less crucial repairs as lower prices were confronted. Repairs beyond Q^* are not without value to the consumer, they are merely worth less than their price.

The definition is complicated a bit by a crucial qualification of the "full information" condition. We should not assume that the optimal repair follows from absolutely complete information, but rather from the actual information that could be held by some agent at any point. Many repairs that are inefficient given complete information are efficient given the information a mechanic might reasonably possess. For example, as a part of a tuneup, the mechanic will normally replace the condensor in a conventional ignition system. In fact, condensors are quite reliable and

Figure 1

The Optimal Repair



seldom require replacement. However, the cost of determining the condition of a condensor is probably greater than the cost of the condensor itself. Further, the cost of failure is high, so the alternative of merely waiting for failure is not efficient. As a result, the efficient procedure, given present technology, is to replace the condensor as a part of routine maintenance. Notice that this contrasts with efficient behaviour under a full-information assumption. With full information, the condensor would be replaced only when its condition warranted it. This argument can obviously be extended to a number of components, including motor oil and other lubricants, hoses, belts, battery cables, etc. While this may appear to be a fine point, it will be shown to be crucial in reviewing previous studies of the auto repair industry.

The definition should not be taken to imply that the mechanic by himself is capable of choosing the optimal repair. The optimum can be defined only in terms of consumer preferences. A consumer might choose exceptionally high or low performance from his automobile. Similarly, consumers' intentions may differ dramatically regarding the service life of an automobile. Thus the optimal repair might differ for two cars in identical condition but with different owners.

This last point is perhaps the major complication in providing an operational definition of an optimal repair. Consumer preferences are not observable, except as revealed through consumer decisions. Since we are specifically questioning whether market outcomes reflect consumer

preferences, we cannot at the same time assume that the market reveals consumer preferences. One major difficulty stems from differing intentions regarding length of ownership (it is recognized that perfect resale markets would obviate this concern; however, it is probably safe to assume that resale markets are imperfect). Some repairs might be postponed by a knowledgeable consumer who anticipates that he will sell the car shortly after completion of the repairs that are considered. Alternatively, some repairs might be undertaken earlier than is technically necessary by a consumer who anticipated that the replacement would not fail during the remainder of his ownership. For example, a consumer might choose to replace a water pump at 80 000 km if he knew that the original equipment would fail by 100 000 km, but that the replacement would last the life of the car under any circumstances. In that case, premature replacement would avoid the inconvenience of an untimely failure.

Another difficulty in providing an operational definition follows from the information assumptions. As demonstrated by the examples presented above, the efficient repair will be determined in part by the cost of obtaining the information about a defect. Thus an assessment that a replaced component is in fact not defective may not, in itself, prompt us to conclude that the repairs provided were not optimal.

These two problems suggest that it is not possible, in general, to establish the optimal repair for a given automobile even if the condition of that automobile is known. Repairs that are optimal in a technical sense may be either overdoing it or underdoing it from the point of view of economic efficiency.

The issues here may prompt some pessimism about the possibility of progress in this area. These concerns do complicate analysis and will limit the confidence with which empirical results can be interpreted. The problems of defining optimal repair will be an important concern in evaluating previous experimental studies of the industry. In theoretical treatment, we can skirt this issue by merely assuming the existence of an optimum and treating it as an abstract concept. It is still possible to consider incentives for deviations from the theoretical ideal. Further, the inability of an outsider to assess the optimum should not be taken to imply that participants in the market cannot assess the optimum. The mechanic may have little difficulty in determining the optimum, given the consumer's pronouncement that he "only uses it around town" or "does a lot of highway driving" or "will sell it at the end of the year," etc. Of course, the mechanic's incentive to identify the correct repair remains questionable.

Overprescription

One of the abuses in which an automobile repair facility could engage is overprescription. Overprescription is defined here to occur when an agency causes the consumer to purchase a bundle of services greater than the amount that would constitute an optimal repair. This excessive repair is actually performed in the case of overprescription. The case in which consumers pay for repairs that are not performed is labelled fraud in this study and is discussed in the next section. The concern in this section is entirely with the case in which all of the recommended repairs are actually performed.

As previously mentioned, it is widely held that overprescription is pervasive in the automobile repair industry. It is alleged that repair shops can increase profits by this practice. The implicit argument appears to be that repair shops earn profits on each unit of output they produce and by providing more output, earn more profits. Such discussions are essentially noneconomic, and the market structures or pricing policies compatible with such behaviour are seldom made explicit.

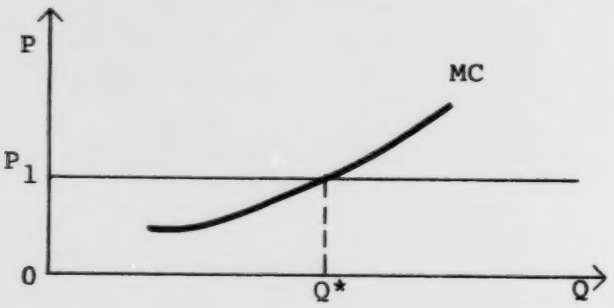
The market structure of the repair industry is actually quite crucial to the profitability of overprescription. While the market structure that could sustain overprescription is not unlikely, it does impose certain restrictions. As a result, it is useful to consider briefly the kinds of market organizations that preclude incentives for overprescription in equilibrium.

One market organization that would rule out overprescription is competition. Taken literally, the textbook definition suggests that perfect competition has no application here. Perfect competition assumes complete information, an assumption which denies the basic problem of auto repair. However, it is possible to describe plausible market structures that approximate perfect competition but do not invoke a perfect information assumption. Such a market description may have application to the auto repair industry. If we invoke the usual assumptions of perfect competition that there are many firms and that consumers know all prices and make no distinction among firms, then price taking behaviour, which is a central characteristic of perfect competition, is implied. Each firm would face demand curves that are approximately horizontal since each firm is small relative to the industry and since consumers would immediately shift to any firm that offered lower prices than the others.

Where each firm faced a horizontal demand function, profit-maximizing behaviour would consist of producing a quantity of output such that price equals marginal cost. This is shown in Figure 2.

Figure 2

Choice of Output: Competitive Conditions



The firm producing at Q* is maximizing profits and has no incentive to produce a larger output. Firms could overprescribe in this case but have no incentive to do so. The firm can produce the profit-maximizing output without overprescribing, so that overprescribing simply involves achieving Q* while serving fewer customers.

It would appear, then, that some departure from competition is necessary in order to motivate overprescription. It is interesting to note that monopoly, in some sense the polar opposite to perfect competition, also provides no incentive to overprescribe. This can be seen in Figure 1. The monopolist can extract the maximum consumer surplus by producing at Q* and charging the customer an amount equal to the trapezoid ABQ*0.

Limitations on the monopolist's ability to price discriminate will introduce a number of different cases. Since the automobile repair industry is probably not usefully characterized as a monopoly, it is not helpful to consider each possible monopoly case. However, the monopolist will never have a larger surplus to extract than when he produces at Q*. One interesting case is that in which no price discrimination is possible (i.e., unit price of repairs is constant). Here again the monopolist will have no incentive to overprescribe. In this case it is useful to note that consumers value transportation services, not the repairs themselves. If we regard the output of the monopolist as transportation services or, better, "durability-extending services," the problem of overprescription can be

seen as equivalent to a well-known question in economics, the issue of whether a monopolist might suppress a technical innovation. The seminal work on this issue, by Hirshleifer,[1] used light bulbs as an example. Consumers demand durability-extending services (or light in Hirshleifer's example) and the monopolist will maximize profits by producing any given quantity of durability-extending services (light) with the fewest possible repairs (light bulbs).

Market organizations that are compatible with overprescription are those which can be characterized as monopolistically competitive. Monopolistic competition assumes the presence of several firms and free entry of firms into the industry. The firm faces a downward sloping demand curve because its product is differentiated in some way from the products of other firms in the industry.

Monopolistic competition is a fairly natural model to apply to the auto repair industry. Repair shops certainly are numerous in any metropolitan area and there appear to be no artificial barriers to entry. Repair agencies clearly are differentiated from one another. Locations differ in terms of their convenience to customers. The reputations for honesty or skill of the mechanics are important differentiating factors. Specialized knowledge of particular automobiles may offer a special attraction to some customers.

The existence of product differentiation means that each firm will face a downward sloping demand function. The negative slope means that each firm has some independent control over price. A firm would not lose its entire market by raising prices slightly, nor could it capture the entire market with a small decrease in price.

The textbook diagram showing profit for a firm facing a downward sloping demand function is shown in Figure 3. The firm maximizes profits by providing Q^*_3 units of output. At that quantity, the marginal cost of providing repairs is equal to marginal revenue.

In this case, in which the demand curve is downward sloping, the firm will always find it in its interest to shift the demand curve outward by any means available. Since marginal cost is less than price, the firm will in-

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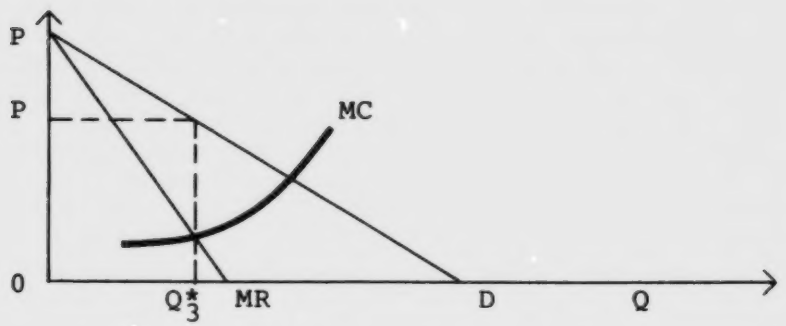
1. Jack Hirshleifer, "Suppression of Invention," Journal of Political Economy 79, no. 2 (March 1971): 382.

Figure 3

Choice of Output: Monopolistic Conditions



crease profits if it can sell a larger output at the price P. If the demand curve shifts to the right, the firm will increase profits, since at the very least it can sell a larger quantity at the old price. Overprescription is one way in which the firm can shift the demand curve. By convincing customers that extra repairs are useful, the firm would manage to shift the demand curve to the right.

It is important to note that there are other factors which will shift the demand curve. Promotion, advertising and convenient hours are examples. Perhaps the most important factor in locating the demand curve for the individual firm is reputation. As a result, the shop that considers shifting the demand curve outward by overprescription must also consider the effect on its reputation of such behaviour. The discussion that showed the competitive case to be inconsistent with overprescription is crucial here. We might have expected that deceptive practices would be most common in the case in which the market appears to be unlimited from the point of view of the firm. Where there are "always more fish to fry," the shop needn't be concerned with reputation. However, it is only in the competitive case that quantity demanded facing the shop at a particular price is variable. Where there are "always more fish to fry," overprescription offers no rewards (although fraud might offer a real temptation). In the only cases in which overprescription is a profitable practice, reputation will also be a concern.

A logical question arises regarding the reason for the contrast in implications between monopoly and monopolistic competition, since in either case the firm faces a downward sloping demand curve. It might appear that the firm with monopoly power regarding part of the industry would

exploit the same pricing techniques as a firm with monopoly power regarding the entire industry. The difference between the two is that in the monopoly case, consumers have no opportunity to substitute across firms. In the monopoly case, the firm can fully exploit consumer surplus by the choice of an appropriate price. Overstating Q* imposes production costs on the firm and cannot increase the value that the consumer places on repair. In the case of monopolistic competition, the product of P and Q is not the only information of importance to the consumer. The consumer's beliefs regarding Q* will determine his expectation of the cost of the required repairs by a competing firm. By overstating Q*, the firm is, in effect, attempting to cause the customer to increase his assessment of the price for repairs that would be charged by competing firms. An increase in P has no similar effect. A price increase is readily detected, and the quantity demanded will fall in response to a price increase as some customers take their business elsewhere. Deceptive practices, then, will improve the position of the firm in a way that mere price adjustment will not.

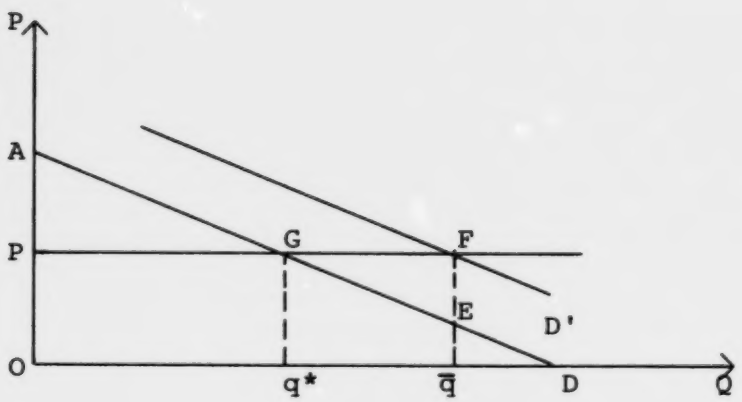
As characterized above, overprescription is a strategy by which the firm can shift demand in a way that is favourable to the firm. The amount of overprescription that is useful to the firm is limited, since overprescription will have an offsetting effect through damage to the reputation of the firm. This "reputation effect" will occur in various ways. Some customers will simply turn down recommended repairs if they are sufficiently suspicious that they are excessive. Further damage to the firm will occur if the customer tells friends. Some customers may simply discover that people patronizing other repair agencies have lower overall repair expenses for vehicles that are essentially similar. The same phenomenon may be seen operating in the other direction: a shop which refrains from overprescription will enhance its reputation and experience increased demand. The firm will face the most favourable demand function when these two effects are, at the margin, exactly offsetting.

Consumers. Given that the conditions which would give rise to overprescription might reasonably occur, it is necessary to consider the effect of overprescription on consumers. This is readily accomplished by considering again the optimal repair as shown above in Figure 1. The effect on the consumer of overprescription is shown in Figure 4. Again, we use the individual's hypothetical "true" demand curve, that is, the demand curve that would apply if the consumer had all available knowledge about the state of his automo-

bile. With the individual's true demand curve D in Figure 4 defined in this way, the optimal repair for a consumer facing the price P is q*. A consumer who is induced to purchase a quantity larger than q* is a victim of overprescription. For example, the consumer might be presented with misinformation such that his demand for repairs is D'. Such a consumer would contract for $\bar{q}$ units of repair services.

Figure 4

Consumer's Loss from Overprescription



We may evaluate the consumer's loss from overprescription by considering the consumer surpluses in each case. Where the optimal repair is provided, the consumer surplus is the area AGq*0 - PGq*0 = AGP. Where $\bar{q}$ repairs are provided, the consumer surplus is the area AE$\bar{q}$0 - PF$\bar{q}$0 = AGP - GFE. As a result, we see that the consumer loss from overprescription in this case is equal to the area of the triangle GFE.

Although very simple, this specification of the loss from overprescription departs markedly from past empirical studies of the automobile repair industry. One major mistake in these studies is that they treat the entire area GF$\bar{q}$q* as loss. So long as the deceptive practice involves only overprescription and not fraud as defined here, the consumer's losses are less than these studies would indicate. The repairs beyond q* are not valueless to the consumer; they merely have a value that is less than the price paid for them.

Fraud

Fraud, as defined here, is the practice of recommending and billing for unnecessary repairs that are not performed. An example of fraud is recommending and charging for an engine overhaul when a simple tune-up is all that is necessary and all that is done to the automobile. Repairs, such as adjustments, that leave no tangible evidence might be particularly suited to this practice. Especially when such repairs were not necessary, there would be very little chance that the fraud could be detected. "Reconditioning" of parts, where the degree of reconditioning cannot be clearly specified, might constitute another opportunity for fraud.

This section introduces a model of fraud in the automobile industry. The approach taken here is to build the simplest model that can still incorporate certain realistic features of the transactions between consumer and producer. So, for example, no allowance is initially made for communication among consumers or for alternative institutional arrangements that might deal with consumer problems. In a sense we have deliberately constructed a model that admits fraud as an equilibrium response, with the intent of examining how likely such an outcome would be.

The model. Again, the opportunity for fraud arises out of the presence of consumers who are not fully knowledgeable about automobiles. Realistically we might expect something of a continuum of consumers -- from very knowledgeable to very ignorant. For the purposes of this model, consumers are divided into two groups: informed and uninformed. While it is convenient to label the two types of consumers according to their knowledge of automobiles, the distinguishing feature that matters here is their search behaviour. Informed consumers will, under some circumstances, search for new bids for auto repair. We assume two things about them: that they know when they have been lied to and that they have "rational expectations" in the economic sense. For our purposes, rational expectations merely means that they know the probability of being lied to. Uninformed consumers are assumed not to search under any circumstances. They may have rational expectations regarding the probability of a lie, but for one reason or another they choose not to search. An appealing story is that the informed consumer knows enough about automobiles to recognize a misrepresentation when it occurs and that the uninformed consumer has no notion whether he has been lied to or not. However, we might equally well suppose, for example, that the so-called uninformed consumer has high search costs or that the informed consumer has good instincts about people. Either version is compatible with the model that follows.

For the purposes of this model, a consumer is an individual who has recognized a deficiency in his automobile and seeks to remedy that deficiency. For simplicity we assume that consumers demand with elasticity zero to have their cars restored to proper operating condition. However, the demand faced by a given shop, or the quantity of repairs paid for in total, may be quite elastic, as is considered below. The simplifying assumption is merely that each malfunctioning vehicle will be repaired in some fashion. Let r be the number of vehicles requiring repair and σ be the fraction of all consumers who are informed in the sense discussed above. That of course leaves $(1 - \sigma)$ consumers who are uninformed.

The consumer initiates the repair by presenting the vehicle to a repair shop and requesting a diagnosis. It is assumed that the procedure is the same for either type of consumer. The repair shop responds with a diagnosis, a statement of the repairs necessary to remedy the complaint. This diagnosis constitutes, in effect, a bid to put the automobile in the condition specified by the owner. The repair that will be performed and is required to remedy the consumer's complaint is designated for all cars to be repair "a," which involves q_a units of repair services. The shop may provide a correct diagnosis in which q_a repair services are specified. Alternatively they may provide a fraudulent diagnosis in which a larger amount of repair services, q_b, are recommended. In this latter case, if the consumer accepts the recommendation of the shop, q_a repairs are performed, which places the car in satisfactory condition, but q_b repairs are charged to the customer ($q_b > q_a$).

For concreteness, the following example may be useful. Every customer in this model needs a tune-up, but some mechanics will recommend and charge for a tune-up and valve resurfacing. The tune-up is repair a and the tune-up with valve grind is repair b. However, the model does not require that all cars have the same defect. As q_a is a unit of measure, more seriously defective cars may be thought of as requiring several repairs, i.e., some multiple of q_a. The restrictive assumption is that there is only a single fraudulent alternative. Specifying a single alternative diagnosis rules out small adjustments in the amount of fraud perpetrated on any single individual. This abstraction simplifies the analysis considerably. In fact, the real opportunities for fraud may be fairly discrete; for example, recommending half a valve job is bound to arouse suspicion.

As discussed above, uninformed consumers are assumed here to contract for recommended repairs in all cases. Informed consumers are assumed to search for a truthful repair bid whenever the expected costs of search are less than the expected savings. Let c be the cost of obtaining an estimate, L the probability of a lie and p the price per unit of repair services. A consumer who plans to reject all bids that include unnecessary repairs will face an expected number of searches of $1/1 - L$. Such a plan will be rational if $c/1 - L \leq p(q_b - q_a)$.

Two behavioural assumptions are implicit in this formulation. First, the informed consumer is assumed to be rather passive, submitting his vehicle for examination and considering the bid only after the diagnosis is offered. We might have alternatively supposed that the informed consumer instructs the shop which repairs to perform. While this second alternative may reflect more accurately the appearance of the exchange between consumer and supplier, the outward appearances may be misleading. For example, a consumer of either type might attempt to signal that he is informed by offering his own diagnosis. The repair shop in turn might recommend additional repairs beyond the consumer's request. If this occurs, the substance of the exchange is identical to the one modelled here; the shop has now submitted a list of repairs that it suggests are necessary for a satisfactory outcome. However, there are reasons why a consumer might refrain from submitting his own diagnosis or from contracting for only a part of the recommended repairs. Where a consumer offers his own recommendations for repair, the repair shop bears no obvious responsibility if the requested repair does not change the performance of the automobile. Similarly, contracting for only a portion of recommended repairs would seem to absolve the shop of any obligation to cure the symptoms or to warranty the work performed. Nonetheless, the accept/reject alternative does impose a limitation on the consumer's bargaining options and must be acknowledged as a simplifying assumption of the model.

The second assumption is price-taking behaviour by both consumers and producers. Such an assumption is a fairly natural one for an industry in which there is a large number of firms. Obtaining information on the price per unit of repair should not involve difficulties beyond those involved in obtaining prices for consumer goods in general. Where the expected performance is identical for a group of shops, we should expect that a shop charging a price above the price charged by others would perform no estimates. Similarly, expectations constant, a small reduction in price should lead the firm to capture an arbitrarily large share

of the market. While this assumption is not different from that normally invoked for competitive industries, a potential complication would be introduced by an assumption that expectations may follow from price. So it is submitted for the time being that price taking is a reasonable assumption, though perhaps not the only reasonable one, for the auto repair industry.

In summary, the model has a group of consumers who are inelastic demanders of auto repair. They bring their cars to shops which lie with probability L by claiming that q_b repairs are required. If the "bid" is accepted by the consumer, the shop performs q_a repairs but charges the amount Pq_b. With probability (1 - L) the shop recommends the true quantity of repairs, q_a, and charges pq_a. Informed consumers ignore all misrepresentations if $c/1 - L < p[q_b - q_a]$, where c is the cost of search.

Behaviour of the repair industry. The repair industry is assumed to be composed of N identical firms, which share the market. Under the assumptions made here, each shop will maximize profits by choosing L, the fraction of customers that are told lies. L is used as the shop's own rate of lying as well as the industry rate, since all shops are identical.

In each period, n customers present their automobiles to the repair shop for diagnosis. The shop is aware that some of the customers are informed and some are uninformed; however, the shop is unable to distinguish between the two types of customers. Let s represent the fraction of all contacts with garages that are made by informed customers. Note that in general $s \neq \sigma$, since informed customers are responsible for more than their share of searches. In fact the relationship between s and σ is

$$(1) \quad s = \frac{\sigma \frac{1}{1 - L}}{1 - \sigma + \sigma \frac{1}{1 - L}} = \frac{1}{\frac{1 - L}{\sigma} + L}$$

and

$$(2) \quad \frac{\partial s}{\partial L} = \frac{\frac{1}{\sigma} - 1}{\left[\frac{1 - L}{\sigma} + L\right]^2} \qquad \frac{\partial s}{\partial \sigma} = \frac{\frac{1 - L}{\sigma^2}}{\left[\frac{1 - L}{\sigma} + L\right]^2}$$

By the same token, the number of searches will not necessarily equal the number of vehicles for which repairs are sought. If r is the number of automobiles in need of repair, N the number of shops and n the number of searchers seen by any shop, the relationship among these variables is

$$(3) \quad Nn = r(1 - \sigma) + r\sigma(1/1 - L)$$

The cost conditions of the shop are represented in a general way as $C = C(Q)$, where Q is the total amount of repair actually performed by the shop. It is assumed that $C'(Q), C''(Q) > 0$. If the shop expects that fraction s of customers will take their business elsewhere upon being given a faulty diagnosis, then its expected total revenue (TR) is given by

$$TR = [(1 - L)pq_a + L(1 - s)pq_b]n$$

The first term within the brackets reflects revenues from customers who are told the truth. The second term reflects revenues from customers who are lied to but who do not search. The profit maximization problem for the firm, then, is

$$(4) \quad \underset{L}{\text{Max}}\ \Pi = [(1 - L)pq_a + L(1 - s)pq_b]n - C(nq_a(1 - sL))$$

Total output is $nq_a(1 - sL)$, since nsL is the number of customers who are lied to and who will search upon hearing a lie. Everyone else gets q_a repairs, although some may be paying for q_b repairs. Since L must be between zero and one, the maximization requires that we form the lagrangian

$$(5) \quad \mathcal{L} = [(1 - L)pq_a + L(1 - s)pq_b]n - C(nq_a(1 - sL)) + y(1 - L)$$

The Kuhn-Tucker necessary conditions are

(6)

$$\frac{\partial \mathcal{L}}{\partial L} = [-pq_a + (1 - s)pq_b]n - C'(nq_a(1 - sL))(-snq_a) - y = 0$$

$$L \geq 0 \text{ and } L\{[pq_a + (1 - s)pq_b]n - C'(nq_a(1 - sL))(-snq_a) - y\} = 0$$

$$\frac{\partial \mathcal{L}}{\partial y} = (1 - L) \geq 0, \quad y \geq 0 \quad \text{and } y(1 - L) = 0$$

The two boundary cases (L = 1 and L = 0) are of some interest and are discussed below. Since we wish to consider a world in which some fraud occurs, the interior solution is our major concern. In that case, y is zero and the optimization condition can be written as

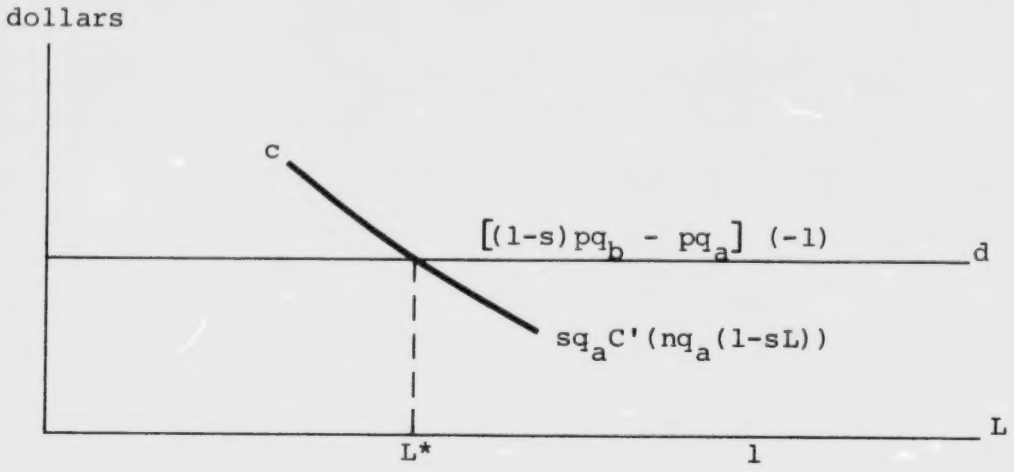
(7) $(1 - s)pq_b - pq_a = -sq_aC'(nq_a(1 - sL))$

While this appears to be unconventional, it is in fact rather intuitive. The left-hand side of equation (7) is the expected effect on revenues of telling another lie. By telling a lie (providing a false diagnosis) the firm will lose pq_a with certainty, since the consumer either leaves or pays pq_b. The firm will expect to gain pq_b back (1 - s) of the time. The right-hand side is the expected effect on total cost of an additional lie. In an expected value sense lying reduces costs, since it results in the performance of fewer service procedures. Taking the absolute value of both sides of equation (7), we can represent the optimization for an interior solution in terms of a convenient diagram (see Figure 5).

The curve labelled c represents the savings from telling an additional lie. The negative slope follows from the result that output is falling as L is increased and that marginal cost falls as output falls. Some simple comparative static results can be seen from the figure. An upward shift in the marginal cost function will cause an increase in the amount of fraud. Increasing p will make $[(1 - s)pq_b - pq_a]$ more negative (d shifts upward), so L falls with increased p. Increasing q_a or decreasing q_b will also cause L to fall. Response to a change in s is not obvious, since that parameter enters in both functions in a way that the two curves are moved in the same direction as s changes.

Figure 5

Interior Solution for the Firm



Under the assumptions made here, the first order condition provides an implicit function of L in s. By totally differentiating the first order condition and solving we obtain

$$(8) \qquad \underset{(-)}{} \qquad \underset{(-)}{} \qquad \underset{(+)}{}$$

$$\left(\frac{dL}{ds}\right) = \frac{-pq_b + sq_aC''(nq_a(1 - sL))(-Lnq_a) + q_aC'(nq_a(1 - sL))}{\underset{(+)}{sq_aC''(nq_a(1 - sL))(nq_as)}}$$

The denominator is signed by the restriction placed on the cost function. The numerator can be shown to be negative when we use the first order condition to show that $pq_b > q_aC'(nq_a(1 - sL))$. The first order condition is rewritten as

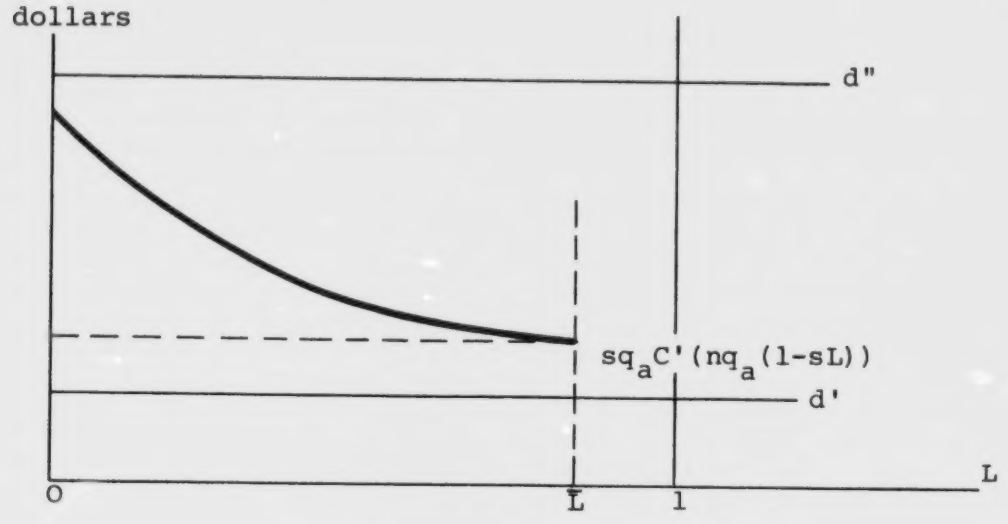
$$(9) \quad pq_b = q_aC'(nq_a(1 - sL)) - \left[\frac{pq_a}{s} - \frac{pq_b}{s}\right]$$

The term in brackets is obviously negative since $q_b > q_a$, so pq_b must exceed $q_aC'(nq_a(1 - sL))$.

The two boundary cases can also be considered in terms of a similar diagram, as shown in Figure 6.

Figure 6

Boundary Cases for a Firm



For a revenue loss function like d', it would be profit maximizing to lie on every occasion. Intuitively, this case results from prices that are quite low relative to costs or from a large discrepancy between q_b and q_a.

Formally, for any given s, the options available to a decision maker fall in the range [0,1]. However, the range of L possible in equilibrium is more restricted, since large enough values for L will cause people to stop searching. Informed consumers will elect not to search if they face L greater than L, where

$$(10) \quad \bar{L} = 1 - \frac{c}{p(q_b - q_a)}$$

$\bar{L}$ is shown in Figure 6. For cases in which the revenue loss function intersects the cost reduction function to the right of $\bar{L}$, profit-maximizing behaviour will be to set L = 1.

The other boundary case occurs when the revenue loss function lies above the cost reduction function for the entire interval [0,1], as shown by the curve d". This would occur if p were high or if the difference between q_b and q_a were small.

Zero profit equilibria. In the foregoing, the number of firms, N, is treated as a constant. That restriction is true in the short run and will operate for the price-lying decisions for firms. However, in the absence of barriers to entry, a long run equilibrium can occur only when profits are zero. Positive profits will attract new firms to the industry, while negative profits will induce exit. In the analysis that follows, the price-taking assumption is initially maintained in order to demonstrate the wide range of possible equilibria. Suspension of this assumption is subsequently shown to limit the number of potential equilibria.

One responsibility is that in which L = 0. Here we have no deception; mechanics divulge the condition of the automobile to the best of their ability, and the market performs like any other competitive market. Entry will occur whenever there are profits, so equilibrium can occur only at zero profits with price equal to the minimum of long run average cost. This outcome is possible for some high "lying cost" function like d" in Figure 6.

The opposite extreme is the case in which L = 1. Such an outcome is possible for some sufficiently small lying cost like d'. Here, in spite of the fact that there is so much lying going on, no one is hurt. No search costs are incurred because consumers know that repairs are always overstated and thus that there is no point to searching. The effective price is again equal to the minimum of long run average cost, although the apparent price is less than the effective price by the factor q_a/q_b. Garages represent all type a repairs as type b repairs and capture pq_b for every q_a. Equilibrium again requires that profits are zero, so entry will proceed until pq_b is equal to the minimum long run average cost of q_a. There is no redistribution across types of customers, since everyone pays for the higher quantity of repair. The only difference between the informed and uninformed is that the informed know that they are being lied to.

The empirical significance of this case is that a determination of the amount of fraud would be misleading as an estimate of the amount of savings available from eliminating fraud. If fraud were to be eliminated in this case, price would rise by a factor q_b/q_a. Consumers would be no better off in a material sense, though they might be a bit less cynical. If resources were required to eliminate the fraud, consumers would actually be made worse off.

The interesting cases are those in which L^* lies strictly between zero and one. Here repairs are being overstated, and in a way that causes some consumers to pay a higher price than others for the same repair. Informed consumers will search until they find a correct repair bid. Uninformed customers will contract repairs at the first diagnosis. Of these, some will pay a price for repair that will be above average cost.

In equilibrium, with identical repair shops sharing the market equally, the quantity of repair performed by any shop is

$$(11) \quad Q = rq_a/N$$

This merely reflects previous assumptions that the demand for repairs is perfectly inelastic, so that rq_a is the quantity of services produced. Substituting (11) and (3) into the profits function (4), we obtain

$$(12) \quad \pi = [(1 - L)pq_a + L(1 - s)pq_b] \frac{r}{N} \left(1 - \sigma + \frac{1}{1 - L}\sigma\right) - C(rq_a/N)$$

Setting this equal to zero to reflect the zero profits condition for competitive equilibrium and rearranging terms, we obtain

$$(13) \quad \frac{C(rq_a/N)}{\frac{rq_a}{N}} = p\left[(1 - L) + L(1 - s)\frac{q_b}{q_a}\right]\left(1 - \sigma + \frac{1}{1 - L}\sigma\right)$$

The left-hand side of equation (13) is recognizable as average cost. Substituting AC for the left-hand side and solving for p, we obtain

$$(14) \quad p = \frac{AC}{\left((1 - L) + L(1 - s)\frac{q_b}{q_a}\right)\left(1 - \sigma + \frac{1}{1 - L}\sigma\right)}$$

Substituting for s from equation (1) and performing a series of manipulations, we obtain

$$(14a)\quad p = \frac{AC}{1 - L + \sigma L + L(1 - \sigma)\frac{q_b}{q_a}} = \frac{AC}{1 - L(1 - \sigma)\left(1 - \frac{q_b}{q_a}\right)}$$

Notice that whenever some amount of lying occurs, price will be less than average cost. Intuitively this occurs because the "victims" of lying are paying more than average cost for the repair that they receive. Formally this can be seen by noting that the denominator must exceed one when $L > 0$ and $q_b/q_a > 1$. The second condition has been assumed to hold throughout this analysis.

The result that price is less than average cost is an important one. It implies that firms must lie at the optimal rate in order to survive. If they were to tell the truth, and collect only pq_a for each repair, their revenues would not be sufficient to cover their costs. Notice also that there is, in effect, a transfer from the uninformed customers to the informed customers. Either type of customer is paying something more than marginal cost, but the uninformed customer is bearing a disproportionate share of fixed costs in the zero profit equilibrium.

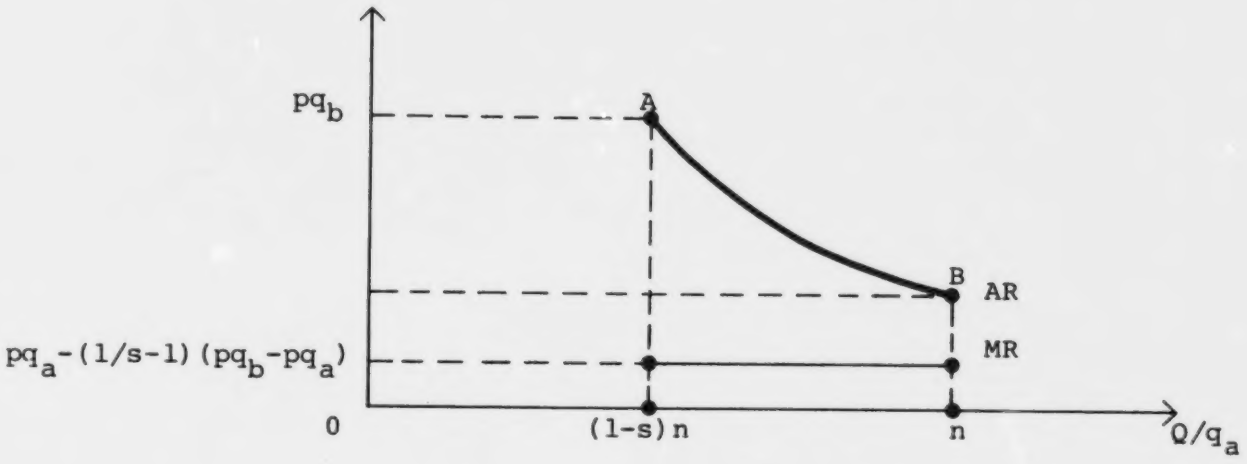
Another concern that is important for evaluating the performance of the auto repair industry is the capacity of the industry. Under the assumptions imposed above, it is possible to demonstrate that this industry has excess capacity; that is, it consists of more firms than necessary to allow each firm to operate at the minimum of its long run average cost curve. To establish this result in terms of conventional cost curves, it is helpful to construct average and marginal revenue curves in terms of the number of vehicles repaired. These curves are shown in Figure 7. The curve AB represents average revenue. Point A reflects the option to lie to all n customers that arrive at the shop. In this case, $(1 - s)n$ repairs are performed and average revenue is pq_b. Point B represents the opposite extreme, with all customers receiving q_a units of repair services. In this case all n customers are served and average revenue is pq_a. To construct marginal revenue, notice that to sell an additional repair at any point the shop must expect to tell the truth to an additional $1/s$ customers. The additional repair generates pq_a revenues, but the additional truth telling sacrifices $1/s(pq_b - pq_a)(1 - s)$ revenues. Thus marginal revenue is a constant (with respect to Q/q_a) and is written as

$$(15) \quad MR = pq_a - 1/s(pq_b - pq_a)(1 - s)$$
$$= pq_a - (1/s - 1)(pq_b - pq_a)$$

With constant marginal revenue, the average revenue curve is bowed toward the origin, as shown in Figure 7.

Figure 7

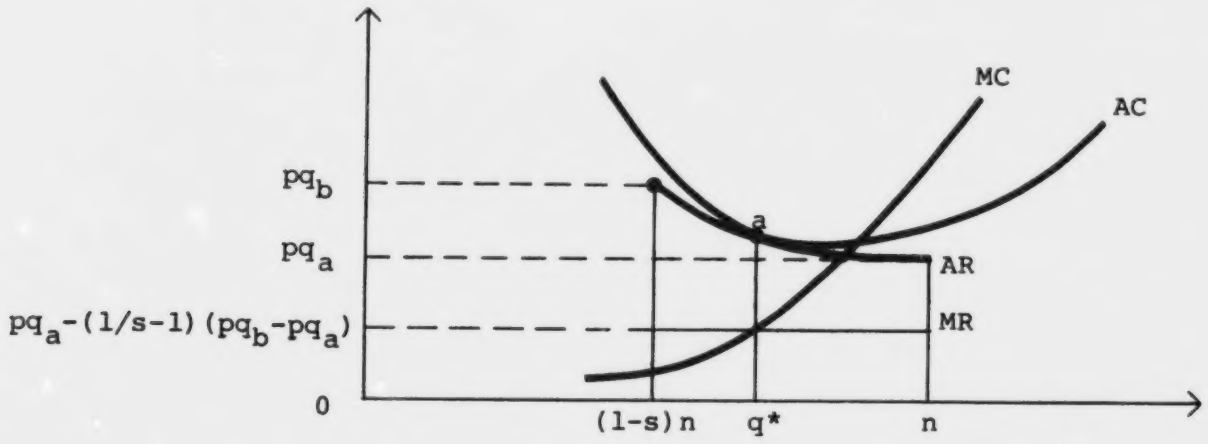
Marginal Revenue Function for Repair



The average and marginal cost and revenue curves for a zero profits equilibrium are shown in Figure 8.

Figure 8

Zero Profits Equilibrium for the Firm



Since the average cost curve must be tangent to a downward sloping average revenue curve, there must be excess capacity in an industry of this sort when there is an interior solution with respect to fraud.

For any given P, the equilibrium is unique. Entry of firms shifts the average revenue curves to the left, with the endpoints moving along horizontal lines located at pq_a and pq_b. The average revenue curve steepens, since s falls as the number of firms increases. If the average revenue curve is more sharply bent than the average total cost curve, the equilibrium will occur at an endpoint.

Under the assumptions made here, the equilibrium is not unique. Associated with every price in the appropriate range is a different zero profit equilibrium with a different number of firms. Lowering price causes the average revenue curve to shift downward and rotate toward the horizontal. So long as pq_b is greater than the minimum value for average total cost, some number of firms will provide a zero profit equilibrium.

There is no obvious mechanism for choosing among equilibria. However, one modification of the assumptions can lead to a unique equilibrium. While we have assumed price-taking behaviour, it should be clear that a firm at a zero profit equilibrium (as depicted in Figure 8) would have an incentive to try to increase n, the number of customers that present cars for diagnosis. Thus, a point like a is not an equilibrium in the strictest sense, since each firm would have an incentive to undercut the others in price by some small amount to increase n. If all firms were to do that, the average revenue curve would fall and rotate clockwise. This would result in losses, with zero profits restored only by exit from the industry, which moves the average revenue curve to the right. There are two plausible stopping points to this process. The first is shown in Figure 9.

Here everyone is lied to but the price of overstated repairs is only sufficient to cover average cost. This is the case in which we all buy the "deluxe" treatment, though many of us are aware that the treatment is very ordinary. Under these conditions, the average revenue curve degenerates to a point, since s goes to zero.

Another possibility is introduced when we impose some structure on the behaviour of the so-called uninformed consumers. Before, it was suggested that they may or may not be aware of the possibility that they are lied to.

Figure 9

Zero Profits Equilibrium L = 1

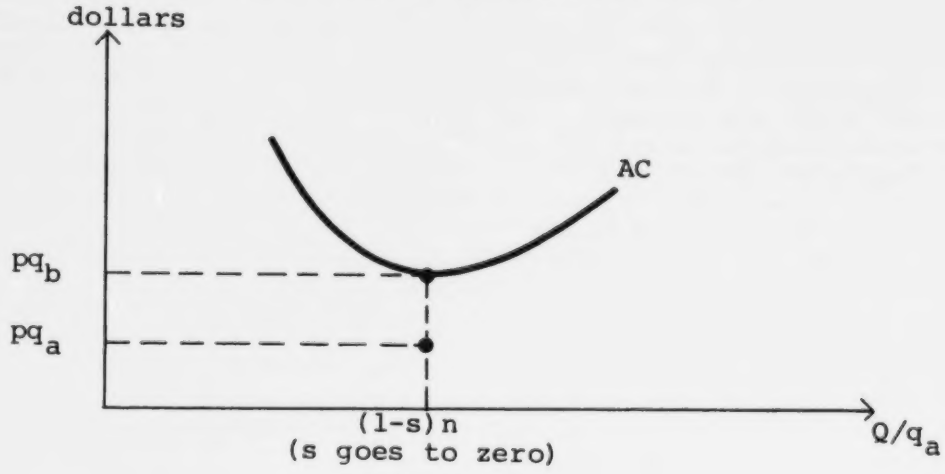
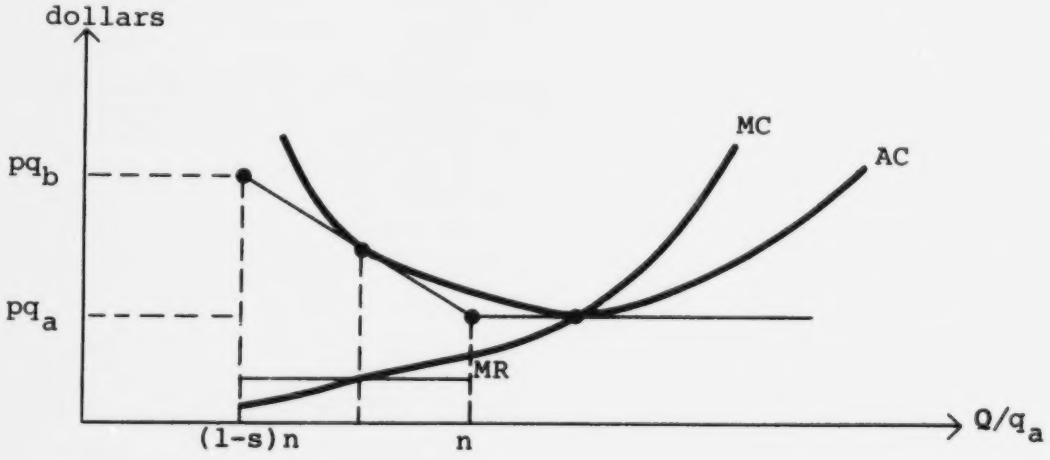


Figure 10

Zero Profits Equilibrium: Special Case



Assume now that in general they do not expect to hear lies but would be alerted to the possibility of a lie by prices that are too low. Specifically, let the minimum of average cost provide a lower bound to the price, since a price below minimum average cost would alert consumers to dishonest practices. This might occur if there were a comparable repair industry with known prices but in which no deception occurs. So, for example, the $29.95 brake job may fail to lure customers or may even scare them off. If consumers had this sort of foresight, the equilibrium is as shown in Figure 10. Here the right endpoint of the average revenue curve is "anchored" by a horizontal line through the minimum point of the long run average cost curve.

Related Issues

Flat-rate pricing. Flat-rate manuals are books that provide estimates of the time required for a mechanic to complete specified repairs. Many garages use these books to calculate the charges for repairs. So, for example, if the book specifies 1.5 hours to change a water pump, many shops will charge for 1.5 hours regardless of the time actually required to complete the repair. Arguments in the popular press (q.v. Consumer Reports)[2] suggest that the use of flat-rate manuals is unfair to consumers. There is some evidence that flat-rate manuals overstate the median time required for a typical mechanic to complete repairs.[3] So, it is argued, the consumer pays more than the cost of producing the repairs if he pays the shop's hourly rate multiplied by an inflated estimate of repair costs.

While the argument seems compelling enough, it is false if automobile repair is produced in competitive or monopolistically competitive markets. Flat-rate manuals would be harmful to consumers only if they were used to facilitate a collusive scheme to set prices. However, the problem in that case is the collusion and not the flat-rate manual. Price fixing by private parties is illegal under existing law and is not a problem of special concern here.

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2. See, for example, Consumers Union, "How Fair Are Repair Costs?" Consumer Reports 44, no. 4 (April 1979): 196-97.

3. Ibid.

Before analyzing the effects of overestimates for repair time, it is important to note that it is not entirely clear that these manuals do provide biased estimates of average repair times. The type of evidence against flat-rate manuals is exemplified by the above-mentioned Consumer Reports article,[4] which cites the claim of a San Francisco district attorney that "in one three-month period, 335 out of 540 customers were charged for more time than the mechanic actually worked." Also cited is a Wisconsin survey: "During the period surveyed, 33,267 hours of body work was performed -- but customers had to pay for 45,631 hours." Prompted by this evidence, Consumer Reports conducted its own tests by timing its own mechanic in 23 repairs on five cars. In 19 of the 23 repairs, the Chilton's Professional Labor Guide and Parts Manual provided estimates that exceeded the time taken by the test mechanic. The Consumer Reports average overestimate on the 23 repairs is about 25 per cent. The article acknowledges the possibility that the test mechanic might be unusually fast.

While overstatement of repairs seems likely in this case, there are alternative explanations. First, the specialized repair shops, which deal with only a particular component or brand, should outperform the general repair agency. A more complicated explanation stems from the distribution of actual repair times. We should expect that repair times would have a positive skew, such as that found in Figure 11. The distribution shown would occur if it were true that while most repairs are handled routinely, the ones that go badly take a lot of time. The median, identified as m, would be smaller than the mean, identified as μ. If the objective of the flat-rate manual is to provide estimates of average repair times, the manual should report μ. The observation that most repairs take less time than the estimates might be only confirmation that the median lies to the left of the mean.

The foregoing argument does not demonstrate that standard manuals are accurate, but serves to illustrate that the evidence presented is not sufficient to warrant the conclusions that have been drawn.[5] What follows is a discussion of the possible outcomes if these manuals are inaccurate. However, no presumption is made here that flat-rate manuals do overstate mean repair times.

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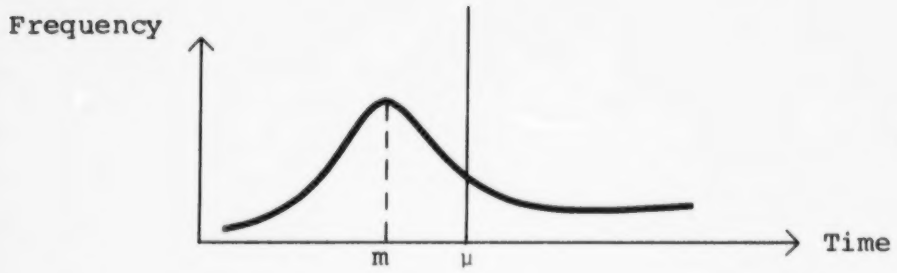
4. Ibid.

5. Ibid.

Figure 11

Labour Input Distribution for a Hypothetical Repair



The simplest case to consider is that in which the flat-rate manual is used to provide an estimate that is binding on the repair agency. Assume for the sake of argument that flat-rate manuals overstate repair time by 25 per cent. Estimates equal to price times quantity would seem to reflect this 25 per cent overstatement. However, price (per unit time) introduces additional flexibility. For example, consider what would happen if p were the competitive price. The product $p\hat{q}$, where $\hat{q}$ is the flat-rate estimate of repair time, would overstate competitive repair costs by 25 per cent. This would lead to profits in the industry and, as in the simple competitive industry model, entry would occur. Entry would continue, forcing down prices, until economic profits were eliminated. Equilibrium would be achieved when the new price was 80 per cent of the no-overstatement competitive price. That is, if

$$\hat{q} = sq$$

where $\hat{q}$ is the flat-rate manual estimate of time required for repair
q is the true repair time
s is defined by the expression as the overstatement ratio.

Then, without some barrier to entry the equilibrium outcome requires that

$$P_e = 1/s\ P_c$$

where P_e is the equilibrium price
P_c is the zero profit equilibrium price if there were no overstatement.

In the binding estimates case discussed above, consumer expenditures are unaffected by the use of the flat-rate manual. In that case, the advantages of the manual become an important concern. The flat-rate manual allows the shop to provide an estimate, to monitor the productivity of workers and to avoid the costs of an elaborate time keeping procedure.

A slightly more complicated analysis is required if estimates are not binding. Some shops may price in a fashion in which the consumer pays the maximum of the flat-rate price and the actual time to complete repairs. This sort of pricing appears overly favourable to the shop, giving the customer the worst of both worlds: he pays for more than the actual repair time if things go well, but the actual repair time if things go badly. However, so long as markets are competitive, this pricing practice will not result in profits for the shop. Again prices will adjust to compensate, falling until average revenue equals average cost. Where a mechanic beats the manual, the customer is paying somewhat more than the competitive price under "ideal" conditions. Where the repairs take longer than the manual estimates, the customer pays less than the true cost of fixing his car.

Where estimates are binding, the repair shop bears the risk that stems from the variation in repair time. Where the price is simply equal to actual repair time, the consumer bears all of that risk. Where the charge is based on the maximum of estimated and actual time, the risk is shared by the two parties, since the equilibrium nominal price is less than the average "effective" price.

An appropriate concern is who should bear this risk. In a world in which the mechanic's behaviour could be costlessly observed, the discussion would centre on the risk aversion of the two parties to the contract. However, in the real world certain moral hazards[6] will probably overwhelm considerations of risk aversion. That is to say, the repair shop can take certain actions that will influence the time taken for repairs. If the shop can insure away the risk involved, it may behave in ways that increase the costs

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6. "Moral hazard" is used here strictly in the sense of its meaning in economics, that is, to reflect a variety of behaviours that follow from imperfect monitoring and enforcement of contracts. No moral implications are suggested.

of repair. There are of course some moral hazards from the consumer's side, as certain precautions may reduce the difficulty of performing repairs. However, it is conjectured here that these effects are minor. Another argument in favour of binding estimates is that the consumer has extremely high costs in measuring inputs, if inputs are to be the basis of repair charges.

Related criticism of the use of flat-rate manuals is that they provide an incentive for mechanics to rush repairs and therefore to do low-quality work. Some shops compensate mechanics for the number of hours billed to customers rather than the number of hours worked. This, however, is not a consequence of the flat-rate manual per se; it is a problem of any piecework compensation scheme based on billing to the customer. The flat-rate manual merely facilitates the measurement of output.

The piecework system gives the mechanic an incentive to work quickly. So long as the quality of the work can be easily monitored, this incentive is appropriate. However, if quality cannot be monitored, mechanics may reduce quality in order to produce more output. If quality is difficult to monitor, then repair shops would not find it advantageous to compensate employees in this way. The real world outcome that repair shops compensate on a piecework basis suggests that the costs of monitoring the quality of output are less than the costs of monitoring inputs.

Routine maintenance. The types of repair services that we would expect to offer the most significant information problems are the nonroutine services, which are undertaken to remedy a deficiency in performance. While the models presented above could be applied to any aspect of automobile repair and maintenance, the most natural application is to nonroutine repairs rather than to routine maintenance. The production linkage between diagnosis and performance is not very strong for matters of routine maintenance. The mechanic may provide advice, but the consumer may seek advice elsewhere. Independent agents, not linked to the production or repair of automobiles, may be consulted for advice. Many popular books and magazines provide recommendations about routine maintenance. Service agencies may also provide this information, but since the bundle of services can be well specified in advance, the total cost of routine maintenance by competing firms may be easily scrutinized before maintenance activities are undertaken.

Another source of information regarding routine maintenance is the manufacturer. Because of the manufacturer's unique familiarity with the automobile, the manufacturer's recommendations may carry special authority. There is no obvious reason, however, to expect that manufacturers would overprescribe routine maintenance. First, car owners will not necessarily purchase routine maintenance from the manufacturer's dealers, which, in any case, are seldom owned by the manufacturer. Of course, manufacturers might capture a part of any policy that benefits dealers through various pricing strategies. However, even if dealers were owned entirely by manufacturers, the manufacturer would benefit from inflating maintenance costs only under very special conditions.

Second, if the consumer correctly anticipates routine maintenance costs, the total revenue that the manufacturer can capture from the services of an automobile will be independent of the division of charges between payment for the car and payment for maintenance. For example, if a firm can sell 1,000 cars at $10,000 when all maintenance is provided at no charge, then we should expect that the firm could only charge $8,500 if it wished to continue to sell 1,000 cars and require maintenance expenditures with a present value of $1,500. If consumers behave rationally, they should regard the two schemes as equivalent.

Consumer behaviour need not be consistent with perfect information. However, one should expect that in time, consumers' behaviour would converge on that associated with complete information as consumers became acquainted with the maintenance requirements of particular brands. That people hold strong opinions about maintenance costs, among other things, is evidenced by the importance of brand loyalty in this industry. Also, the offers of routine maintenance at no additional charge by AMC and Chrysler, and Ford's claims of low routine maintenance requirements all provide evidence that the consumer does take maintenance costs into consideration when making the initial purchase decision.

There are cases in which tie-in sales will facilitate price discrimination. But price discrimination requires overpricing the tied commodity, not overproducing it. Also the argument applies to commodities for which service per unit of the good varies across consumers, and so

is probably not appropriate to automobiles.[7] Finally, as discussed above, maintenance is not contractually tied in the case of automobiles.

Conclusions

This chapter provides an analytical overview of a number of potential, actual or alleged problems in the automobile repair industry. Partly because of the broad scope, but largely because of the nature of the problems considered here, the analysis presented is not decisive in all cases. For example, the absence of a unique equilibrium where there is a potential for fraud obviates any comparative statics results.

While the ambiguity of some of the results is unfortunate from a scientific viewpoint, there remains much insight to be gained. Public discussion of this topic has suffered from premature conclusions by many commentators. Many of the arguments presented here are in sharp contrast with the point of view reflected in the consumer press. Further, as mentioned in the introduction to this chapter, the conceptual models presented here are decisive in interpreting empirical evidence.

Even with a reasonable amount of caution, there are a number of points that can be made. In order of appearance they are:

1. An optimal or ideal repair cannot be defined simply in terms of technical effects. The optimal repair can only be determined in terms of consumer preferences, technical possibilities, information held by the mechanic and costs of obtaining information. Repairs that are optimal (i.e., conditional on complete information about the condition of a component) may be inefficient once the cost of determining component condition is taken into account.

2. An incentive for overprescription is not present in either the simple monopoly or competitive cases. Some elements of both monopoly and competition are required for overprescription to be advantageous for the firm.

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7. For a complete description of the uses of tie-in sales, see M.L. Burstein, "A Theory of Full-Line Forcing," Northwestern University Law Review 55 (March-April 1960): 62.

In the case of monopolistic competition, overprescription results in demand shifting. In that case, however, other demand-shifting characteristics, in particular reputation, become a concern. Where consumers are knowledgeable and where repeat buying is important, we should expect the reputation effect to be large.

3. The loss due to overprescription is not the full amount charged for services beyond the ideal repair, but the difference between the consumer's hypothetical full-information valuation of the repairs performed and the amount charged. This correct measure of loss will in many cases be smaller than the incorrect measure that is often used.

4. The effects of fraud are difficult to evaluate and depend on the competitiveness of the market.

5. Flat-rate manuals are probably an inappropriate target for regulation. They convey certain benefits by allowing for binding estimates before repairs begin. Any systematic overstatement in required repair time will be compensated by an adjustment in price. The popular criticism of these estimates ignores the price adjustment that will occur.

6. There is no obvious incentive for manufacturers to overprescribe routine maintenance. Such overprescription could be sustained only under very unusual circumstances. Further, information about routine maintenance is available from independent sources.

Chapter III

EMPIRICAL EVIDENCE ON AUTOMOBILE REPAIR

Introduction

In Chapter II it was argued that the cost advantage of joint production of diagnosis and correction creates circumstances that can lead to both overprescription and fraud. Very simply, the consumer will rely on the repair firm for advice, and under some conditions the firm will have an incentive to give wrong advice. This chapter presents evidence of various sorts on the magnitude of the problems in the automobile repair industry.

There is a presumption in the popular consumer literature that consumer losses in this industry are quite large. For example, one press release from the U.S. Department of Transportation claims that 53 per cent of all expenditure on automobile repair is spent on "unnecessary" repairs.[1] Consumer Reports cites U.S. Government claims that 40 per cent of all repair expenditure is wasted. These and similar claims have found their way into the general press and have become quite widely disseminated.[2]

Canadian Consumer Expenditures on Automobiles

In order to determine the extent of consumer losses in this industry, a logical first step is to determine what expenditures actually are. For most consumer expenditures, such an exercise would be of little value. For example, the hypothetical question, "Do consumers spend too much on movies?" would appear to be a rather empty one. For automobile repair, however, the consumer's objectives can be assessed within fairly narrow limits on commonsense grounds. Cars are expensive and consumers therefore wish to preserve them for a fairly long time. Auto repairs are reasonably interpreted as an intermediate good, with transportation services being the associated final consumer good. As a result, we can view actual consumer expenditures and, by comparing

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1. U.S. Department of Transportation, U.S. Department of Transportation News, May 7, 1979.

2. Consumers Union, "How Fair Are Repair Costs?" Consumer Reports 44, no. 4 (April 1979): 196-97.

these with the cost of preventative maintenance and expected corrective actions, draw some conclusions. In effect we will be considering the amount of expenditure on intermediate goods (repairs) per unit of final good (automobile services) in order to appraise the performance of this industry. Interpretation of such comparisons requires some precautions, as discussed in the next section.

Information on actual consumer expenditures on auto repair can be obtained from the Statistics Canada surveys of consumer expenditure. In order to construct a Consumer Price Index, it is necessary to choose a very specific bundle of goods, which will be priced in subsequent periods. It is desirable to have the bundle chosen correspond as closely as possible with the bundle that consumers actually purchase. In Canada the consumer bundle is constructed on the basis of extensive family expenditure surveys. In addition to constructing the Consumer Price Index, these surveys are useful in providing information about consumption expenditures. Two surveys, those for 1969 and 1974, form the basis for the present study.

An alternative approach is to use industry output data in order to evaluate total expenditures. Unfortunately, the level of aggregation, even for three-digit industries, does not allow for much confidence in computing the values appropriate to the present purpose. For example, Standard Industrial Classification (S.I.C.) 654 is essentially gasoline service stations. To obtain an estimate of auto repair output in S.I.C. 654, it would be necessary to subtract gasoline sales from total sales. Retail gasoline sales are available, but no data exist that would indicate what part of gasoline sales is due to firms in S.I.C. group 654. For this reason, the use of industry output data was rejected for this study.

Statistics Canada publishes some results from the family expenditure surveys.[3] Published results are almost entirely the expenditures per spending unit by various consumption categories. (A spending unit is a special definition of Statistics Canada that is approximately the equivalent of a household.) So, for example, we can observe the average household expenditure on tires, on batteries, on lubrication, etc. The average expenditure data are reported

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3. Statistics Canada, Urban Family Expenditure 1974, cat. no. 62-544 (Ottawa, 1977); idem, Family Expenditure in Canada 1969: Volume I All Canada: Urban and Rural, cat. no. 62-535E (Ottawa, 1973).

in considerable detail, allowing the creation of aggregates that are appropriate to many different purposes. The disaggregation is preserved below to allow comparisons with any appropriate standard that might be identified.

A complication arises from the fact that expenditures are reported as averages per household. We can interpret these data most usefully only if they can be transformed into expenditures per automobile. Fortunately, Statistics Canada collects supplementary information about the surveyed households in addition to the expenditure information. Included in the survey questionnaires are questions about the number of automobiles owned, the model years of these cars and the number of miles driven. Through a special data request to Statistics Canada, this information has been made available. For the present purpose it is sufficient merely to compute the number of cars per household and the number of miles driven. Dividing the expenditures per household by the number of cars per household, we obtain a value for expenditures per household. (In the following section, model-year information will be used in order to predict likely repair requirements.) All information on ownership refers to ownership as of December 31.

Values reported in Table 1 show the 1974 expenditures per household, per automobile and per mile for each of several repair categories. Table 2 shows the distribution of the sample by model year. The survey for 1974 included 6,630 spending units located in 14 Canadian cities. The equivalent information for 1969 is presented in Tables 3 and 4. The 1969 survey used 15,140 spending units from both urban and rural areas in the ten provinces.

Home production. A further concern in determining the market value of all automobile repairs is home production. While many motorists will not attempt repairs, others may perform a significant amount of maintenance service. The information provided by Statistics Canada includes all types of motorists -- those who perform their own repairs and those who do not. Ideally, we would like to measure expenditures by those who patronize repair shops. However, the presence of "do-it-yourselfers" in the sample would bias our measure downward if we did not include some measure of the value of their production.

Unfortunately, there are no Canadian data that measure home production. For the United States, the University of Michigan Panel Study on Income Dynamics does provide some

Table 1

Repair Expenditures in Canada by Expenditure Type, 1974
(1974 Dollars Canadian)

Item no.	Expenditure category	Expenditures per household	Expenditures per automobile	Expenditures per mile
1	Oil and oil changes, lubrication	24.80	27.34	0.0030
2	Tires and tubes	36.90	40.68	0.0044
3	Batteries	4.70	5.18	0.0006
4	Repair jobs not covered by insurance:			
4a	Mechanical repairs	68.40	75.42	0.0082
4b	Body repairs (incl. painting)	16.40	18.08	0.0020
4c	Other repairs	19.70	21.71	0.0023
5	Repair parts purchased separately	12.80	14.11	0.0015
6	Other services (incl. washing)	6.30	6.90	0.0007
	Total	190.00	209.98[a]	0.227[a]

Sources: Statistics Canada, Urban Family Expenditure 1974, Table 21, p. 98 and unpublished data from Statistics Canada.

Note: Automobiles per spending unit equals 0.907, number of miles driven per automobile equals 9,247 and number of miles driven per household equals 8,390.

[a]Individual figures may not add up to total because of rounding.

Table 2

Distribution by Model Year
in Family Expenditure Survey 1974

Model year	Percentage of all cars in sample
1959 and older	1.22
60	0.47
61	0.56
62	1.13
63	1.73
64	2.96
65	4.12
66	5.48
67	7.11
68	9.10
69	10.20
70	9.39
71	8.44
72	11.57
73	12.89
74	12.78
75	0.79

Source: Statistics Canada, unpublished data.

Table 3

Repair Expenditures in Canada by Expenditure Type, 1969
(1969 Dollars Canadian)

Item no.	Expenditure category	Expenditures per household	Expenditures per automobile	Expenditures per mile
1	Oil and oil changes	20.80	24.27	0.0028
2	Tires and tubes	32.40	38.80	0.0045
3	Batteries	4.20	4.90	0.0006
4	Lubrication	4.70	5.48	0.0006
5	Repair jobs not covered by insurance:			
5a	Brake adjustments and repairs	9.60	11.20	0.0013
5b	Body repairs (incl. painting)	9.00	10.50	0.0012
5c	Other repairs	23.20	27.06	0.0031
6	Repair parts purchased separately	7.40	8.63	0.0010
7	Other services (incl. washing)	19.00	22.16	0.0025
	Total	130.20	151.90[a]	0.0175[a]

Source: Family Expenditures in Canada 1969, Table 60, p. 170.

Note: Automobiles per spending unit equals 0.87509, number of miles driven per automobile equals 8,697 and number of miles driven per household equals 7,610.

[a]Individual figures may not add up to total because of rounding.

Table 4

Distribution by Model Year
in Family Expenditure Survey 1969

Model year	Percentage of all cars in sample
1954 and older	2.43
55	0.69
56	1.05
57	1.11
58	1.48
59	2.42
60	3.36
61	4.27
62	6.82
63	7.82
64	10.20
65	11.54
66	11.54
67	10.98
68	11.54
69	11.14
70	1.58

Source: Statistics Canada, unpublished data.

useful information on this matter.[4] The Panel Study surveyed 5,000 American households regarding a large number of issues. Among the questions asked of the respondents are, "How much time did you spend on automobile repairs?", "How much money do you think you saved?" and "How many cars did the household own?" Information is also provided regarding the complexity of the repairs undertaken. Where the respondent did not estimate the amount saved on repairs, the survey centre staff assigned a wage based on the complexity of the repairs undertaken. The information available allowed for the computation of an estimate of the value of home production on automobile repair. Unfortunately, no complementary information on expenditures is available from the Michigan study.

Table 5 shows the time spent and the amount saved on automobile repair per automobile in 1972, as computed from the Panel Study survey tapes. The regional disaggregation shown was performed to test the hypothesis that owners in warm weather areas (i.e., the "south," or the so-called sun belt states) find it more convenient to perform their own repairs. While the differences are quite small, the figures for the "north" are assumed to correspond more closely with the Canadian experience and are used in the computations presented below.

Table 5

Value of Home Production in Automobile Repair

	North	South
Dollars saved (U.S. 1972) per automobile	$35.70	$36.75
Time spent per automobile	6.19 hrs.	6.44 hrs.

4. University of Michigan Survey Research Center, Panel Study of Income Dynamics (Ann Arbor: Survey Research Center, 1974).

To adjust the Canadian expenditures shown in Tables 1 and 3, it is necessary to multiply these values by the 1972 Canadian-U.S. exchange rate (100.44) and then use a time series for the Canadian Consumer Price Index for "auto repair" to obtain comparable dollar values.[5] The results of these computations are shown in Table 6.

Table 6

Canadian Automobile Expenditures
Adjusted for Home Production

Year	Expenditures per automobile	Expenditures per mile
1969 (1969 dollars Canadian)	181.07	0.0208
1974 (1974 dollars Canadian)	253.85	0.0274

A Basis for Comparison

The expenditure estimates presented above can be used for comparison with any standard to evaluate the performance of the automobile repair industry. This section offers one such standard, an engineering-type study, in order to make evaluations. The use of operating cost data for automotive fleets was given consideration, but correspondence with the three major domestic automobile producers, plus Volkswagen, Hertz and others did not yield any suitable data. Further, the differences in type of driving between fleet use and private consumer use of automobiles might complicate the interpretation of such information.

5. Statistics Canada, Consumer Prices and Price Indexes, cat. no. 62-010 (Ottawa, various issues).

Estimates suitable for comparison are contained in Cost of Owning and Operating an Automobile 1976.[6] This study, one of a series produced by the U.S. Department of Transportation, reports the estimated cost of vehicle operation by type of vehicle and by expenditure category. Among the categories reported are maintenance, accessories and tires. Accessories are not included in the Canadian family expenditure data dealt with above. Also, tires are excluded from both the survey and the engineering totals in order to focus on the kind of expenditures most appropriate to the discussion here. (Including tire expenditures would make fairly little difference. The 1974 family expenditure survey reports per-car expenditures of $40.68, while the U.S. study reports required expenditures averaging $44.80 for a full-sized automobile, $38.72 for a compact and $35.00 for a subcompact.)

The intent and procedures of the U.S. Department of Transportation (USDOT) are important for the interpretations that follow. The USDOT study is what economists would term an engineering study. The intent of such a study is to determine likely requirements to achieve some specific goal, in this case the ten-year operation of an automobile. Estimates are based not on survey statistics on actual experience, but rather on technical requirements based on what is known about the production process being considered. Plausible assumptions are made about costs such as financing, initial purchase price, insurance costs, etc., in order to generate estimates of expenditures in those categories. For repairs, similar sorts of assumptions are made. Procedures are described fairly specifically in the study. Of particular relevance to the present section is the following passage.

> Repairs and Maintenance -- The costs shown in this report are not taken from records of specific vehicles nor are the amounts of usage, fuel consumption rates, or any other factors presented as "averages." However, the vehicle and operation cost factors are considered to be typical for cars of these sizes in the study area. The factors used here were selected on the basis of available statistics, discussions

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6. U.S. Department of Transportation, Federal Highway Administration, Cost of Owning and Operating an Automobile 1976 (Washington, D.C.: Government Printing Office, 1978).

with automobile industry personnel, and assistance from service managers of major automobile dealers.

To estimate car operating costs, it was necessary to make a series of assumptions concerning tire and battery replacements, wheel alignments, light bulbs, fan belts, brake linings and parts, lubrications, and other repair and maintenance items. The need for repairs was estimated from data gathered during discussions of repair experience with car service personnel, and from the authors' knowledge. They include such items as starter repair, carburetor overhaul, replacement of fuel pump, radiator hoses, muffler, tail pipes, and shock absorbers, and what must seem to the owner to be a pretty long list of other repairs. Several of these repairs and replacements must be made more than once during the life of the car. No costs were included for repairs or replacements that would have been covered by warranties.

The mechanical features on the vehicles in this study are similar to those in the prior study, so changes in costs result primarily from increases in charges for parts and labor. Maintenance and repair costs reflect a 2-year increase in parts prices over those used in the 1974 study. In the current study, the costs for all repairs are based on 1976 prices. A charge of $13.50 an hour or more for shop labor is not unusual, and this is a major factor in the 3.7 cents-per-mile cost for repairs and maintenance for the standard-size automobile. The relative simplicity of compact and subcompact cars offers an opportunity for cost savings to those who might like to do some of their own minor repairs and maintenance. Replacement of spark plugs, windshield wiper blades, fan belts, radiator hoses, etc., on many cars of all sizes are simple and there are indeed savings to be realized. When trained mechanics do these jobs, vehicle

owners must pay professional wages. Although there are increasing numbers of "at home" mechanics, repair garage experience shows that the public generally is not ready to assume this responsibility.[7]

Table 7

Highlights of USDOT Study
Maintenance and Repair Costs
(1976 Dollars U.S.)

Year (miles driven)	Type of automobile		
	Standard Yearly cost (cost per mile)	Compact Yearly cost (cost per mile)	Subcompact Yearly cost (cost per mile)
1st (14,500)	157.05 (0.0108)	139.33 (0.0096)	126.12 (0.0087)
2nd (13,000)	199.95 (0.0154)	234.68 (0.0181)	190.82 (0.0147)
3rd (11,500)	414.67 (0.0361)	296.88 (0.0258)	167.63 (0.0146)
4th (10,000)	548.03 (0.0548)	386.04 (0.0386)	436.97 (0.0437)
5th (9,900)	406.52 (0.0411)	397.98 (0.0902)	370.54 (0.0374)
6th (9,900)	471.46 (0.0476)	405.32 (0.0410)	407.86 (0.0412)
7th (9,500)	704.82 (0.0742)	618.16 (0.0651)	403.33 (0.0425)
8th (8,500)	280.80 (0.0330)	293.95 (0.0346)	378.46 (0.0445)
9th (7,500)	431.20 (0.0575)	132.41 (0.0177)	124.50 (0.0166)
10th (5,700)	49.63 (0.0087)	56.25 (0.0099)	53.74 (0.0094)
Ten-year average (cost per mile) 100,000 miles	366.41 (0.0366)	296.10 (0.0296)	265.99 (0.0266)

7. Ibid., p. 6.

The USDOT study computes results for three types of automobiles: standard-sized, compact and subcompact. The standard-sized car is a "Big Three" four-door sedan. The compact and subcompact cars are assumed to be American made. Assumptions regarding the annual mileages are, in exception to the comments above, based on odometer surveys.

With no adjustments, the results for maintenance and repair costs are shown in Table 7.

In order to make useful comparisons, several adjustments must be made. First, the Canadian family expenditure survey results are adjusted by subtracting expenditures on tires and tubes and adjusting the 1969 values to 1974 dollars (Canadian). These results are shown in Table 8. The price index used for adjustment in all cases that follow is the "auto repair" component of the Consumer Price Index.[8]

Table 8

Adjusted Values for Actual Expenditures on Automobile Repair and Maintenance for Canada (1974 Dollars Canadian)

Survey	Expenditures per automobile	Expenditures per mile
1969	213.51	0.0245
1974	213.17	0.0230

The USDOT study assesses costs for a hypothetical ten-year life span. In computing average expenditures for the ten years, each year's experience is given equal weight. These averages cannot be used for comparison with our real world data, since the family expenditure survey sample is not composed of equal numbers of cars of each vintage. To attain comparability, weighted averages of the values in Table 7 were generated for each size class and for each year of the survey. That is, average "required" expenditures were generated as follows:

8. Statistics Canada, Consumer Prices, various issues.

$$W_{jk} = \sum_{i=1}^{10} d_{ik} C_{ij}$$

where W is the weighted average for the kth survey for size class j

d_{ik} is the fraction of the sample of the kth survey that is i years old at the time of the survey (values from unpublished data, family expenditure surveys)

C_{ij} is the cost of maintenance for cars i years old of size class j (values from the USDOT study; see discussion below).

These weighted averages converted to 1974 Canadian dollars are shown in Table 9.

Table 9

Weighted Average Repair Costs (1974 Dollars Canadian)[a]

	1969 weights		1974 weights	
	Annual cost	Cost per mile	Annual cost	Cost per mile
1. Standard	254	0.0259	251	0.0231
2. Compact	213	0.0212	207	0.0209
3. Subcompact	192	0.0193	184	0.0186
Weighted average				
4. (see text)	234	0.0238	230	0.0219

[a]Adjustment from U.S. dollars by exchange rate; conversion to 1974 by automobile repair component of the Canadian Consumer Price Index (Statistics Canada, Consumer Prices, various issues).

Row four in Table 9 is the weighted average of the three model types. Weights used reflect the presence of each size class in the Canadian fleet. Since the family expenditure surveys did not provide a distribution by size class, the weights were taken from the Canadian Automobile Driver Survey.[9] (That survey uses the size classification "intermediate" in addition to the three used here. Weights were generated by assigning half of the intermediate weight to standard-sized cars and half to compacts. The resulting shares for standards, compacts and subcompacts correspond almost exactly to the Canadian Automobile Driver Survey shares for eight, six and four cylinder cars respectively.) Weights used are .59, .33 and .08 for standards, compacts and subcompacts respectively. The final weighted averages (Row 4) of the USDOT results are the values that are appropriate for comparison with the family expenditure results shown in Table 8.

The most striking aspect of the two sets of numbers is how close these values are. Annual expenditures by Canadians are actually slightly less than the annual costs identified by the American study. The American study does assume slightly higher annual mileage values than those computed from the family expenditure surveys. When cost-per-mile values are used, the expenditures by Canadians are higher than the USDOT study would predict. Using the costs per mile, Canadian expenditures were approximately 3 per cent higher in 1969 and 5 per cent higher in 1974 than the USDOT study values when all of the necessary adjustments are made.

There are more than the usual number of caveats that must be applied when interpreting the data. These are presented in some detail below. It can be noted here, however, that these results are strongly at variance with the popularized findings that 40-50 per cent of all automobile repair expenditure is wasted.

As is always the case with empirical studies, problems of data reliability and measurement error must be noted. This study uses two different surveys, the family expenditure survey (for 1969 and 1974) and the University of Michigan Panel Study on Income Dynamics. In such surveys, concerns about the representativeness of the sample and the

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9. Environmental Control Consultants Limited, Canadian Automobile Driver Survey (A study undertaken for the Department of the Environment, Ottawa: Information Canada, 1973).

accuracy of recorded information arise. Of particular importance in the family expenditure survey is the respondent's ability to recall expenditures. Statistics Canada and its counterparts in other countries have developed methodologies aimed at minimizing resulting inaccuracies. Cross-checking, reinterviewing and the use of diaries for certain expenditures are techniques that are employed. Automobile repair expenditures, which tend to be large, infrequent and recorded by receipt, are probably accurately represented in the survey results.

A basic difficulty in interpreting expenditure data also arises here. In general, expenditures are not taken to be a useful proxy for price, since quantity purchased falls as price rises, other factors being constant. That is not quite our problem here, since the central issue is the "goodness" of quantity decisions, but it is related. There is at least the conceptual possibility that expenditures could be low, not because the industry performs well, but because it performs poorly. That is, it may be that misrepresentations of various sorts make the effective price of repairs quite high. If this were the case, expenditures might be below that which would occur in the absence of deceptive practices. This result would of course require an elasticity of demand with respect to the effective price that exceeds one.

A related concern is that the intended program of the Canadian motorist might differ from the ten-year vehicle life, which is the assumed objective of a consumer in the U.S. study. If, for example, Canadians intended a vehicle life of only five years, appropriate maintenance expenditures would be lower than the U.S. study would indicate. If that were the case, a finding that Canadian spending was sufficient to produce a ten-year life expectancy would imply an overexpenditure on auto repair by Canadians.

The empirical significance of these two issues could be evaluated, in part, if the life expectancy of passenger vehicles in Canada were known. Exact measurement of the average life of a vehicle is a fairly involved undertaking, and is beyond the scope of this study. Rough estimates, however, may be made from sales and registration data. For the ten years ending December 31, 1977, the average of annual passenger vehicle sales in Canada was 839,475.[10] Sales grew steadily in that period, reaching

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10. Statistics Canada, New Motor Vehicle Sales, cat. no. 63-208 (Ottawa, various years).

991,398 in 1977.[11] In 1977 there were 9,554,000 passenger vehicle registrations.[12] These figures suggest an average vehicle life somewhat in excess of ten years. Thus the ten-year program of the U.S. study would appear to form a useful basis for comparison. (Notice that the distribution over model years shown in Tables 2 and 4 cannot be used to determine life expectancy. A ten-year life expectancy in a steady state would imply that the median age of automobiles is five years. With growth in the sales of automobiles, the median age would be somewhat less than that.)

A final issue is the price of repairs. The U.S. study used a prevailing hourly service rate as the basis for computations. If this is the "wrong" hourly rate from a social point of view, the U.S. values are accordingly incorrect. Price could be above the competitive price if, for example, there were collusion or other sources of monopoly power. Note, however, that the specific problem of monopoly is not a direct or natural consequence of the informational problems that affect this industry.

Experimental Studies of the Automobile Industry

The results of the previous section conflict strongly with the results of past U.S. experimental studies. This section reviews those studies briefly in order to explain why the two types of studies yield differing results. While the intent here is to establish the superiority of the present methodology, it is not absolutely necessary to do so in order to sustain the results presented above. Differences in outcome could be the results of contrasts in the institutional environment between the two countries.

A study commissioned by the U.S. Department of Transportation is representative of the most common type of experiment.[13] In that study, faults were deliberately

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11. Ibid.

12. Statistics Canada, Road Motor Vehicles: Registrations 1977, cat. no. 53-219 (Ottawa, April 1979).

13. Johnson Center for Environmental and Energy Studies, University of Alabama at Huntsville, "Draft Report: Survey of Automobile Repair Practices," mimeographed (prepared for the Office of the Secretary of Transportation, contract no. DOT-05-90004, Huntsville, 1977).

introduced into vehicles, which were then taken to repair agencies for correction. Alternatively, a vehicle without any fault demanding immediate attention would be taken in with a general request for an inspection. For example, one "script" used by drivers was, "I have just bought the car and I'm not sure about the condition of the brakes. I want you to take a look at them and do whatever is necessary to make them right." In an experimental survey covering seven U.S. cities, repairs that were deemed unnecessary by the experimenters accounted for 53 per cent of all repair expenditures.

The first and most important difficulty with this experimental procedure is the interpretation given to the results. In the case of an artificially introduced and known fault, the cure is obvious to the omniscient observer. However, diagnosing an engine fault is seldom trivial, and the types of problems introduced (for example, a shorted plug) are often not failures that occur in isolation "in nature." Further, a failure of one component may be a good predictor of deterioration in related components. Mechanics are generally reluctant to perform diagnostics for these reasons. They may spend a fair amount of time finding the single fault causing difficulty at the moment, only to have the customer dissatisfied a short time later when a related component fails. So, for example, the standard practice of replacing points, plugs, rotor and condensor may well be efficient given the likelihood of simultaneous deterioration in these components and the inconvenience of repeated trips to a repair agency. Thus the technically optimal repair, which is conditional on an artificially introduced fault, may differ from the economic optimum given real world circumstances.

A second deficiency of the experimental procedure typically used is that it denies interactions with the consumer, which normally occur. If garages are known to overstate systematically the repairs that ought to be undertaken, consumers may discount the mechanic's advice and contract for only a portion of the recommended repairs. To the extent that such gaming occurs, the experimental outcome may overstate the magnitude of the distortion. Similarly, many consumers will reject a diagnosis calling for excessive repair. In the experiments, dishonest mechanics are weighted according to their numbers, not according to their share of revenues. To the extent that consumers reject bad advice or rely on reputation to avoid unscrupulous mechanics, the experiment will overstate losses due to misrepresentation. (An interesting postscript to the above-mentioned USDOT-

commissioned experiment is that in a press release accompanying the report of the results, only the five most expensive repairs in the tune-up category were discussed, giving an impression that the problem was much bigger than it actually is.)

A further shortcoming with these experiments is that they fail to duplicate the long-term relationships that consumers may have with repair firms. Consumers may adopt a strategy of dealing with a particular service station for most gasoline purchases, then using that shop for repairs. (This kind of market adaptation is discussed in some detail in Chapter IV.) Where this approach or similar practices succeed for the consumer, the experimental technique used will again tend to overstate the losses of a representative consumer. The experiments, then, are at best indicative of the outcome when an uninformed consumer, picking a repair shop at random, accepts its recommendations without question.

One experimental study that uses a different approach from that described above is the Motor Vehicle Diagnostic Inspection Demonstration, which was performed by the Computer Sciences Corporation for the U.S. Department of Transportation.[14] This $17 million study involved the construction, operation and evaluation of Diagnostic Centers in Alabama, Arizona, Puerto Rico, Tennessee and Washington, D.C. These centres were established to test their effects in four areas: safety, fuel economy, emissions and repair costs.

The central experiment was to bring cars to the Diagnostic Centers for a very thorough inspection. (How owners were induced to participate is not specified in the study report.) Upon completion of the inspection, some owners were given detailed information about any problems with their automobiles. The remaining owners were given only the information that their cars had passed or failed. This second group of owners functions as the control group for the study.

Given the concerns here, the most significant result is that the treatment group spent significantly more for automobile repairs than the control group. The study purports to show that the additional expenditures were cost

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14. J.L. Duda et al., Program Evaluation Support for the Motor Vehicle Diagnostic Inspection Demonstration (Falls Church, Va.: Computer Sciences Corporation, 1977).

effective, but the information provided in the project report does not provide clear support for that proposition. Also, some of the benefits accrue to individuals other than the owner. As a result, the improvements due to diagnosis may reflect failure of markets other than that for auto repair. For example, undermaintenance of pollution control systems may be a manifestation of the consumers' preferences.

While consumers in the treatment group did have greater overall expenditures than the control group, there is some evidence that within subsystems (i.e., brakes, suspension, emissions) the treatment group spent less on repairs. Such an outcome is possible if the treatment group attempted to remedy more problems but spent less on each subsystem. However, even when expenditures are considered by subsystem, the savings to the treatment group are less than the likely measurement error of the study.

Two conclusions of significance to the present study may be drawn. First, while the existence of positive net social benefits from diagnosis suggests some imperfection in the performance of the automobile repair industry, there is no confirmation in the study that too many repairs are performed. If anything, the study seems to suggest that consumers would benefit if more repairs were performed. Second, the study is unable to provide conclusive evidence that diagnosis can provide private net benefits to the automobile owner. The margin of benefits over costs is small, and the benefits include social benefits that are not appropriated by the vehicle owner.

As a part of their participation in the Motor Vehicle Diagnostic Inspection Demonstration, the research team for Alabama (Johnson Environmental and Energy Center, University of Alabama at Huntsville) conducted additional follow-up tests for repaired vehicles.[15] After repairs, consumer's receipts were examined. Repairs were classified as necessary, optional or unnecessary by two individuals, an "experienced shop foreman" and "an experienced parts specialist." The Alabama research team concluded from these inspections that 24 per cent of the repair actions studied

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15. Johnson Center, "Draft Report."

were unnecessary. Unnecessary repair actions were responsible for 32 per cent of all expenditures for the group studied.[16] However, they do comment elsewhere:

> It should be noted that an unnecessary repair does not necessarily indicate that the motorist has been "ripped off." Instead it indicates that the repair action is one which was made to an item which had passed the auto check inspection.
>
> For example an unnecessary repair may have been included as part of a "package" repair by the repair facility, may have been requested by the motorist such as part of preventative maintenance or may have been done to insure compliance with the Auto Check reinspection. Consequently, to insure compliance the repair facilities may tend to "over repair" not only to insure compliance, but also to insure that the consumer will not have to return in several months for additional repair.[17]

Conclusions

Survey data on actual expenditures of Canadians indicate that consumers spend about $213 per year or 2.30¢-2.45¢ per mile (1974 dollars) for preventative and corrective maintenance on automobiles. These expenditures are very close to the costs predicted by a U.S. Department of Transportation study.[18] While a number of precautions are in order in interpreting these data, it legitimately may be concluded that these data provide no support for the experimental results that 40-50 per cent of expenditure on automobile repairs is wasted. In addition, the experimental

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16. Johnson Center for Environmental and Energy Studies, University of Alabama at Huntsville, "An Evaluation of Component Repair Costs for Auto Check Participants" mimeographed (prepared for the United States Department of Transportation, National Highway Traffic Safety Administration, contract no. DOT-HS-5-01056, Huntsville, 1977), p. 4.

17. Ibid., p. 12.

18. U.S. Department of Transportation, Cost of Owning.

methodology employed in previous studies has been examined and found wanting. These surveys suffer from incorrect interpretation of results, improper generalization to all repair experience and poor approximation of consumer behaviour.

No conclusions should be drawn from the evidence presented here about the underlying "honesty" or "dishonesty" of automobile service personnel. A reasonable hypothesis, in the absence of evidence to the contrary, is that mechanics, on average, are as dishonest as the rest of us. The results presented here suggest only that the system of rewards and punishments, which is implicit in market and related legal institutions, may be functioning better than had been expected, in inducing producers to behave in a socially efficient manner. These results should not be the basis of advice to consumers to relax their skepticism in the purchase of auto repairs. The information problem and the opportunity for fraud are real. In fact, the strategies of consumers to avoid abuses may be a major factor in reducing losses. Reduced caution by consumers might lead to significant losses. On the same note, nothing presented here conflicts with the findings of survey research that indicate that consumers find shopping for auto repair difficult. Search costs may be quite high relative to the value of transactions in this industry. The results presented here suggest that consumer search activities are productive, not that they are low or that they ought to be reduced.

Chapter IV

INSTITUTIONS PERTAINING TO AUTOMOBILE REPAIR

Introduction

In light of the information problems of the auto repair industry, many governments have passed legislation or created regulation that applies specifically to automobile repair. General business practices legislation also has obvious application to this industry. In addition, certain competitive responses to the information problems may reduce or compensate for information problems.

Business Practices Legislation

In addition to the licensing of mechanics, which controls entry into this industry, a number of measures have been imposed at the provincial level that, in principle, constrain the day-to-day operation of repair shops. These laws are outlined in very general terms and their effects are considered in this section. (Details of this legislation are contained in Appendix A.) The major provisions of business practices legislation are quite uniform across the provinces. However, recently enacted legislation in Quebec departs from that which holds in the other provinces and imposes additional restraints. This new legislation is discussed separately at the end of this section.

Prohibited practices. Traditional fair business practice legislation prohibits a wide range of abuses, including several that are of special significance to this industry. These include:

1. Representing used or reconditioned goods as new. It is illegal in all provinces to represent used, reconditioned or reclaimed goods as new. Provisions vary across provinces as to what specifically is meant by a representation. However, the definitions appear to be quite broad, so that nondisclosure that used parts have been installed could constitute an unfair practice.

2. Charging for repairs that are not performed. In all provinces, this is an unfair business practice, as would seem desirable on commonsense grounds. If enforceable, these provisions would rule out the practice analyzed as fraud in Chapter III.

3. Recommending unnecessary repairs. In all provinces, a a mechanic is prohibited from representing repairs as necessary when in fact they are not. This provision addresses the issue of overprescription as discussed above. We should note here, however, that the difficulty in establishing what is meant by "necessary" repairs must limit the practical effect of this legislation.

4. Exceeding estimates. In three provinces, Alberta, Newfoundland and British Columbia, it is illegal to charge materially in excess of an estimate that has been given to the consumer. These provinces do not require an estimate but only provide for the enforcement of estimates if they are provided. This creates an environment in which binding estimates can be obtained by consumers. As such, these provisions may be interpreted as a mere extension to the right to contract; that is, a contract for repairs at a specific price is explicitly deemed enforceable. In addition, the Quebec law requires that shops provide estimates and treats those estimates as binding.

On the surface, then, it would appear as though deceptive practices which are considered at length in Chapter II are all ruled out by provincial law. However, the same difficulties that would give rise to the potential for fraud and overprescription make enforcement difficult. Again, the consumer may never become aware that he has been deceived or, if aware, he may find that proof of the deception is difficult. To reuse an example, where a repair consists of adjustments, it will usually be impossible to establish the state of adjustments prior to repairs. Thus while deceptive activities are nominally prohibited, the usefulness of such laws is questionable. It is also notable that existing laws (except in Quebec) do not prohibit undertaking repairs that, though necessary, are not approved by the customer. This practice is discussed below under Disclosure laws.

Enforcement and remedies. Fair business practice legislation belongs to a class of measures sometimes referred to as privately enforced or consumer enforced law. These measures give the individual a private right of action to collect damages, have contracts nullified or have performance of contracts imposed. The advantage of such an approach to enforcement is that there are many enforcers. The disadvantage is that private individuals may not be in a position to detect patterns of illegal activity and therefore may be

poorly equipped to enforce the law. Also, private citizens' incentives to enforce the law will depend crucially on the magnitude of losses, the kinds of awards that are specified and the costs of pressing a claim.

In the case of auto repair, there are a number of reasons why private enforcement is likely to be weak. For the most part, awards in cases of unfair business practices tend to be limited to damages or specific performance (i.e., one party is instructed to carry out the terms of the contract). Legislation provides for exemplary damages in some cases, but such awards appear to be uncommon. Since damages resulting from individual instances of unfair practices are likely to be small -- smaller in most cases than the time cost of pressing a claim -- most cases of fraud, even where the fraud is clearly detected, will not result in claims.

The combination of unlikely detection of fraud, unlikely prosecution if fraud is detected, difficulty in proof and small awards suggests that business practice legislation does not provide a strong incentive for right behaviour in this industry. In many cases the consequence of being "caught" is merely the loss of the gains from the fraudulent activity. These problems with private enforcement have given rise to a number of stronger measures that have been invoked in Quebec and in some jurisdictions in the United States.

Quebec. Special legislation pertaining to automobile and motorcycle repair has been proclaimed in force as this research was being completed. This legislation contains a number of provisions that are new to Canada and merit special attention. Quebec's new legislation includes a number of what are called disclosure laws. Under the new provisions a repair agency is required to provide a written estimate before any repairs are carried out. The firm cannot charge for the estimate unless the customer is informed beforehand of such a charge. Further, the revealed estimate charge must include the cost of reassembly if repairs are not done, including the costs of parts that may be destroyed by disassembly such as gaskets, seals, etc. Before repairs begin, the customer must indicate acceptance of the estimate, which then becomes binding on the firm. If additional repair requirements are discovered, authorization for the additional work must be obtained. This can can be done by telephone, but the firm must note the name of the person giving the authorization, the time and the phone number at which that person was contacted. Upon completion of repairs the consumer must be given a written statement detailing the repairs, charges, warranty and other particulars of the transaction. Also, if the customer requests that parts be

saved, they must be made available to him. The entire disclosure requirement may be waived by the consumer providing that the consumer writes out and signs such a waiver. Finally, the consumer must be informed of his right to an estimate by a prominent sign in the repair shop.

Licensing of Mechanics

It is likely that the most significant group of regulations pertaining to automobile repair are those which create a system of compulsory licensing for automobile mechanics. All of the provinces and the Territories have some certification system for auto repair, with certification mandatory everywhere in Canada but Manitoba, British Columbia and the Territories.[1] Under a compulsory certification system, any person who performs repairs on motor vehicles for a fee must be certified or be presently engaged in an apprenticeship training program. The definition of automobile repairs is provided by the various regulations. In most cases, formal training in automobile repair at a college or equivalent is required. Most provinces also require conventional schooling to Grade 10 prior to undertaking preapprentice training.[2]

Licensing requirements are a part of provincial regulation and vary across provinces. Regulations are created under power granted by specific legislation. For example, licensing regulation in Ontario is provided under the authority of the Apprenticeship and Tradesmen's Qualification Act. As detailed in Appendix A, other provinces have mandated the creation of such regulation through legislation specifically aimed at the automobile repair industry. (Most provincial regulations are not indexed. As a result, creating a detailed survey of provincial regulation would be a costly undertaking. Fortunately, a rather complete survey of certification requirements is provided in Ellis Comparative Chart of Apprentice Training Programs 1976,[3] upon which the following discussion is based.

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1. Frank Ellis, Ellis Comparative Chart of Apprentice Training Programs 1976 (Ottawa: Department of Manpower and Immigration, 1976).

2. Ibid., Chart 35.

3. Ibid.

The major certification classification for those engaged in automobile repair is motor vehicle mechanic. Some provinces also provide for specialization in particular components of the automobile. An apprentice will first seek employment with a firm that employs certified mechanics. The apprenticeship period is four years in all jurisdictions except Ontario, where the term is five 1,800-hour work periods. The duration of apprenticeship training can in some cases be reduced by additional in-school training. During the apprenticeship the trainee must take additional in-school training at a local college or equivalent in all provinces but Quebec. Examples of such training requirements are one eight-week session each year for three years (Ontario), four eight-week sessions in four years (Alberta and the Northwest Territories), four four-week sessions (British Columbia and the Yukon). In some cases, instruction received prior to the apprenticeship can be credited against the apprenticeship training. Students must show satisfactory completion of the schooling sessions as determined by the college attended. In addition to satisfactory completion of the training sessions, the student must pass a standardized examination.

A further constraint to the flow of newly certified mechanics is a limitation on the number of apprenticeships that may exist at any time. Part of provincial regulation specifies the number of certified mechanics that must be present for each apprentice in a shop. For example, typical regulation specifies that three certified mechanics must be present for each apprentice employed. While no uniform records are maintained, it appears that such rules are being followed. Mr. Oliver Wright of the London office of the Ontario Ministry of Colleges and Universities reports that his office almost always has had a large listing of individuals seeking positions as apprentices. Such excess supply of apprentices has persisted even through fairly long periods of rapid growth in the demand for mechanics.

The training for certification as an automobile mechanic is quite general; the apprentice must take training and pass examinations on virtually every automobile component. However, in practice many mechanics are specialized, and most will not attempt repair on all automotive components. Some provincial regulations reflect this specialization by offering certification in subspecialties. For most subspecialties, training is shorter than that required for the general mechanic. Related specialties offered are Automotive Machinist (Ontario and British Columbia), Motor Vehicle Fuel and Electrical Systems Mechanic (Nova Scotia, Prince Edward Island, Ontario and British Columbia), Motor Vehicle Mechanic -- Truck and Bus (Nova Scotia and New

Brunswick), Motor Vehicle Steering, Suspension and Brakes Mechanic (New Brunswick, Ontario and British Columbia) and Motor Vehicle Transmission Mechanic (Ontario and British Columbia). In provinces where certification is mandatory, mechanics may not work for a fee outside of their subspecialty.

In light of the above, it seems reasonable to conclude that occupational certification in this industry is an important factor. Educational requirements are stringent in most cases, the training period is quite long and there are standardized tests that must be passed. In addition, restraints on the number of trainees per certified mechanic limit the number of mechanics that can be trained at any time.

Legislative Initiatives in the United States

The automobile repair industry has only recently become a concern of state legislatures in the United States. Even as late as May 1979, only half of the fifty states had any legislation or regulation pertaining specifically to this industry.[4] Since automobile repair firms are local in nature, the authority to regulate this industry is held almost entirely by the states. The major exception to this is authority over matters that primarily or significantly involve manufacturers. Since most manufacturers are involved in interstate commerce, the federal government may pass laws that affect their activities.

The major distinction between the United States and Canada as pertains to auto repair is the virtual absence of occupational licensing in the United States. As late as 1974, no state had mandatory licensing and by 1979 only Hawaii, Michigan and Washington, D.C., had passed such legislation.[5] (Hawaii requires only that 50 per cent of mechanics at a repair agency are licensed.) However, as this legislation involves "grandfather clauses," it is unlikely that it has had any significant effect. No state has a voluntary certification program that is state managed,[6]

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4. Automotive Parts and Accessories Association, Summary of Auto Repair Legislation and Regulations of the Fifty States (Washington, D.C.: Automotive Parts and Accessories Association, 1979), preliminary table.

5. Ibid.

6. Ibid.

though various private certification schemes do exist. Such private voluntary schemes as do exist have met with very limited success.

A considerably less restrictive control is the licensing of dealers. Dealer licensing is required in five states plus Washington, D.C.[7] (In addition, Rhode Island requires licensing of body and fender repair shops.) In most cases, the licensing requirement is closer to what is normally termed registration. Dealers simply register and pay a fee. In some states, most notably California, the revoking or suspending of a dealer's licence may be used as a punitive action.

Rapidly spreading innovations in the United States are laws and regulations that require certain disclosures by the repair firm. These laws are by far the most prevalent in the United States and are now either pending or in effect in 27 states plus Washington, D.C.[8] Of these, only three states had such rules prior to 1972. Disclosure laws typically require that the repair agency inform the customer what repairs will be undertaken and what the charges for those repairs will be. In most cases, either the estimate is binding or the actual charge must not exceed 110 per cent of the original estimate.

The details of the operation of disclosure laws vary considerably across states. In six states, an estimate is required only if the customer requests one.[9] In Alaska, the shop must post a sign informing the customer of his right to an estimate on request. Several states require an estimate but allow the customer to waive the right to one. In some states, a statement of an hourly wage must be given where the customer has not requested a specific estimate. Several states have adopted measures to deal with the possibility that further defects are uncovered while repairs are underway. For example, California allows the garage to obtain authorization by telephone for additional repairs. As in the Quebec plan, the shop must note the name of the person giving the authorization, the time of the call and the number at which the customer was reached.[10]

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7. Ibid.

8. Ibid.

9. Ibid., pp. 1-15, passim.

10. Ibid., p. 1.

There are variations across individual states regarding the content and meaning of the disclosures. Some states require that the use of used or rebuilt parts be specifically approved. Many states require that parts be returned either in all cases or upon consumer request. Others prohibit the subcontracting of repairs without customer approval.

Seven states have created Motor Vehicle Repair Bureaus.[11] It is not possible to determine from published sources the specific nature of the operation of these bureaus. Such agencies normally are empowered to oversee certification of mechanics or shops, to handle consumer complaints and to provide information to consumers.

A final type of regulation is specific performance requirements. By their nature, such rules are likely to be costly to comply with, to monitor or to enforce. As a result, this kind of regulation appears to be quite rare. In states that have mandatory vehicle inspections, inspection procedures are specified. In California, certain regulations have been imposed regarding the replacement of ball joints and the repair of automatic transmissions.[12]

Two states, California and Michigan, have been especially innovative in the area of auto repair regulation. The key feature of the Michigan program is an elaborate system of occupational licensure. The Michigan laws presently being phased in will require that every mechanic is certified in at least one special area of automobile repair. Further, a shop must have one certified mechanic in each area in which it offers services. The eight areas for specialization are narrowly defined. They are: engine repair, automatic transmission, manual transmission and rear axle, front end, brakes, heating and air conditioning, electrical system, and tuneup.[13] This system, though elaborate, is probably less restrictive than the Canadian system, since mechanics can specialize in fairly narrow areas. Michigan also has disclosure requirements and a Bureau of Motor Vehicle Repair.

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11. Ibid., preliminary table.

12. State of California, Laws and Regulations Relating to Automotive Repair Dealers and Licensed Official Stations (Sacramento: Bureau of Automotive Repair, 1978), Title 16, Article 6.5.

13. Ruth Woodling, Auto Repair Regulation: An Analysis (Athens, Ga.: Institute of Government, University of Georgia, 1978), p. 23.

California has no certification program for mechanics. Dealers, however, must be registered and must meet certain standards to perform certain specific functions pertaining to repairs that are imposed on consumers by law. For example, repair facilities must be licensed to do official emission control inspections or police-imposed headlight adjustments. The main features of the California program are a comprehensive disclosure requirement and an active Bureau of Automotive Repair. The Bureau of Automotive Repair provides brochures containing consumer information on specific problem areas such as ball joints and automatic transmissions. Additionally, its monthly newsletter, which is aimed primarily at repair firms, disseminates information on such topics as the Bureau's activities and the obligations of mechanics. The Bureau undertakes disciplinary actions of various sorts, which are publicized in this newsletter.[14] In the twelve months prior to September 1979, the Bureau processed 6,600 complaints, resulting in adjustments, refunds or new repairs with a value of $122,000. To put this in perspective, however, it should be noted that California contains over ten million vehicles and, by the estimates provided in the previous chapter, has annual repair expenditures in excess of $3 billion.

Economic Analysis of Regulation in the Automobile Repair Industry

The regulatory measures outlined in the previous two sections may be grouped usefully into three categories: licensing, disclosure and oversight. Licensing, popular in Canada, is the strongest of these measures that has been put into practice. Disclosure laws are popular in the United States and have recently been put into effect in Quebec. It will be argued here that such laws impose low costs and offer significant advantages to consumers. Oversight of the repair industry is a very general category that essentially consists of monitoring the process and the outcome of the repair industry. Oversight includes dealer registration, equipment specification, process specification and the presence of complaint bureaus. The extent of supervision can be varied greatly. However, oversight is potentially the strongest form of regulation. It is also likely that it is the most costly to administer. Significant oversight does not exist in any North American jurisdiction at this time,

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14. State of California, Bureau of Automotive Repair, Newsletter, June 1979.

although the suggestion by commentators of nearly complete failure of this industry may prompt such legislation. A final group of institutions that apply to this industry are the protections offered by common law and traditional business practice legislation. In a sense, this represents the "default" option, since such institutions constitute the legal environment in the absence of regulation for this specific industry. These general remedies will not be evaluated here; however, discussion of additional regulatory measures presumes some suspected or actual shortcoming of these traditional institutions.

Licensing. The most important regulatory instrument for the Canadian automobile repair industry is certification. As outlined above, certification is mandatory in all jurisdictions but Saskatchewan, British Columbia and the Territories. In virtually all cases, becoming licensed involves a long apprenticeship and a fairly large amount of in-school training.

There are several arguments that can be made in favour of licensing. Licensing is typically present in cases where the public safety is involved, where there are significant information problems, or both. In cases where the public safety is involved -- that is, cases where individuals other than contracting parties may be affected -- licensing may be interpreted as an attempt to control for certain so-called externalities. Compulsory certification is an attempt to compel the consumption of at least some minimum amount of service in these cases. So, for example, society requires that bridges be designed by certified engineers. Of course, the legal liability system should cause decision makers to confront the proper incentives, but certain failures of that system may occur. In cases of informational problems, licensing exists not to impose minimum quality on consumers, but to aid the consumer in purchasing the quality of service that he would have chosen with full information. For example, the consumer may wish to be assured that the producer has certain abilities. But the consumer may be unable to judge these abilities or able to judge them only at great cost. Under these conditions, consumers may elect to deal with only those practitioners who meet certain minimum qualifications.

A further argument in favour of licensing is that it provides an avenue of control over practitioners. Where there is a potential for deceptive practices, revocation of a licence is an additional penalty that can be invoked. Again, traditional legal liability might appear to achieve the same result. But the possibility of bankruptcy and the high cost of litigation may limit the effectiveness of these measures.

Each of these three arguments can be applied to the automobile repair industry. Clearly the safety of the public is affected by the quality of work in auto repair. Faulty repairs on brakes, steering, tires, window glass, etc., can lead to accidents. Such accidents will involve not only car owners but individuals who were not parties to repair transactions. This is the externality aspect of auto repair. The information argument applies as well. In this, as in many service industries, there is no product to examine prior to purchase. Consumers may not be able to judge the quality of repairs even after they are completed. Further, the costs of obtaining information through trial and error are quite high. Reputations can be earned, but bad mechanics can simply move periodically to avoid the consequences of their actions. The difficulty in judging repair work also implies that reputations, good or bad, are formed only very slowly. Consumer or producer losses in the meantime may be quite large. Finally, the potential for fraud is large and the threat of loss of licence may offer an additional incentive for avoiding deceptive practices.

There are counterarguments against each of these three arguments which favour licensing in principle. In addition, the actual practice of licensure may fall short of the ideal and therefore result in either a failure to achieve the intended objective or even the creation of additional problems.

In response to the externality argument, three points may be made. First, as mentioned above, the traditional avenues of legal liability may provide incentives for proper caution. The potential for bankruptcy is not unique to this industry and may be remedied to a degree by bonding of repair firms. Second, the attainment of minimum qualifications provides little assurance that adequate care will be exercised once the practitioner is on the job. On the contrary, the premiums that may be earned for work by licensed individuals may prompt licence holders to work too quickly or to work dangerously long hours. (This last point will hold only if licensing introduces artificial barriers to entry.) Third, the availability of only high-quality service may prompt some consumers to purchase no service rather than low-quality service. For the purposes of public safety, it is likely that some service is better than none.

The information argument -- that consumers prefer high quality and are willing to pay for it, but have difficulty measuring it -- is compellingly countered by the possibility of voluntary certification. If in fact some set of qualifications offered advantages to consumers (i.e., benefits exceeded costs), then consumers would patronize only

certified mechanics. Voluntary certification offers several advantages over compulsory certification. The certification scheme must pass the market test. If standards were inappropriate, consumers either would ignore certification or possibly would avoid certified mechanics. Voluntary certification allows room for diversity. If private certification were permitted, firms could compete to find the most appropriate set of criteria for certification. Barriers to entry could not arise, so long as the supply of certifications was competitive and uncertified mechanics could compete with certified ones. Another advantage is that consumers could choose whatever level of skill they thought was appropriate. Consumers might choose to use uncertified mechanics for routine repairs and certified mechanics for complicated repairs.

It should be noted that voluntary certification schemes have generally not been successful. In the United States, the National Institute for Automobile Service Excellence offers voluntary certification for mechanics, but participation up to now has been meagre. This outcome may shed some doubt on the viability of voluntary certification. On the other hand, it does suggest that reputation or other signals are more important to consumers.

The third argument in favour of licensing is that it may be used to penalize wrongdoers. Whatever the validity of the argument, it appears that licence revocation is seldom imposed. Banning a person from working in his profession is a severe penalty, which certifying agencies may be reluctant to impose even though such a penalty is usually within their legislated authority. The loss imposed by such a penalty is high relative to those imposed by courts for similar misdeeds.

The foregoing suggests that, if nothing else, the case for compulsory certification is not an obvious one. The simple and traditional arguments in favour of licensing have serious flaws. However, this need not imply that no arguments may be made in favour of licensing. Such an argument must rest on some failure in private certification markets. The factors that might cause this market to fail are not obvious; however, it is possible that certifiers would behave as monopolists or that people could "free ride" on the developer of the certifying scheme. A firm contemplating the development of a certifying scheme might expect that other firms would simply copy its certifying standards once they were developed. Such expectations would obviously deter private development of the certification scheme. Thus the possibility of benefits from government certification cannot be dismissed. Extension of this argument to compulsory licensing (rather than voluntary) is somewhat tenuous.

That the case in favour of licensing is not strong might not matter if the costs were small. It is therefore necessary to consider what the costs of licensing are. Obvious costs of licensing are the costs of setting standards, writing examinations, communicating standards, enforcing compliance, handling complaints, etc. These costs are substantial and would be present in any certifying scheme, compulsory or voluntary.

It is likely that the most significant costs of compulsory licensing are those that result from the creation of barriers to entry. If a licensing scheme sets arbitrary standards -- standards that are inappropriately stringent or simply ration positions in the profession -- a number of inefficiencies result. The most obvious one is that the price of service is "too high"; that is, consumers confront a price for services greater than the value of resources consumed in the production of those services. In addition to having too few firms in the industry, licensing may result in the presence of the "wrong" firms. Under competitive conditions, only the most efficient producers remain in the industry. If zero profits were being earned by a firm that was less efficient than a potential entrant, that potential entrant could expect to earn profits upon entering. Entry of new firms would result in a decline of profits, such that some firms no longer earn revenues sufficient to cover their opportunity costs. With compulsory licensing, all firms may earn economic rents. There is no mechanism to assure that inefficient firms are weeded out.

Economists' objections to licensing have traditionally focussed on the effects of entry barriers. It is important to note, however, that entry barriers impose costs only when licensing standards are inappropriate. If certification merely required the knowledge which every legitimate practitioner would have, none of these costs are imposed. There are reasons why we might expect standards to be either arbitrary or excessively demanding. It is in the interest of those holding licences to diminish the rate at which new licences are issued. If the licensed group is self-regulating or holds significant political power, entry standards will tend to be too high. Also, a licensing standard cannot readily deal with diversity in tastes. A person wishing to consume low-quality service at a low price may be unable to purchase such services under licensing.

What can be said, then, about the licensing requirements for automobile repair in Canada? Without an extensive study on this particular issue, it is difficult to draw conclusions. However, certain observations are possible. As mentioned previously, the requirements for certifi-

cation in automobile repair are quite general. Students must show proficiency in every area of auto repair. This requirement may be inconsistent with present specialization of both repair shops and the personnel within shops. However, some provinces do offer certification in subspecialties. Another barrier is the constraint on the number of apprenticeships that may exist at any agency. It is not clear whether this is an important limitation. There are waiting lists for apprentice positions, but it is not known whether this is due to provincial rules or employment conditions generally. It is possible that some of those who list themselves as seeking an apprenticeship are either not qualified or not actively seeking positions. Provincial rules specify wage minimums as a percentage of the wages earned by journeymen. Apprentices would be in excess supply if these wage minimums were set too high relative to the earnings of journeymen.

Disclosure laws. Disclosure laws obligate the repair agency to provide specific information before, during and after performing repairs. Such laws are a part of Quebec's new legislation and are quite popular in the United States.

To understand disclosure laws, it is helpful to note what is permitted in their absence. Take, for example, the case in which a consumer leaves a car at a repair agency with instructions for repair. The shop may undertake and charge for any repairs. It also holds a mechanic's lien against the vehicle, so the consumer must pay the amount charged in order to get the car back. However, the shop is not completely unconstrained in this process; business practice legislation prohibits unnecessary repairs or charging for repairs that are not performed. But discovery of such offences may be difficult, and litigation for recovery may be costly. Also, the consumer is offered no legal protection against repairs that, though technically of value, are not in keeping with the consumer's preferences. A disclosure law substantially changes what is permitted by requiring that the total charge for repair be stated before repairs begin.

With information, as with most any economic commodity, it is reasonable to assume that more is better than less. The competitive model, under which we can demonstrate the merits of decentralized decision making, assumes complete information. Consumers can use additional information if it is to their advantage to do so; otherwise they may disregard it. The complication arises once we take note that information is almost always costly to create. With costly information, conclusions about disclosure laws may be drawn only with a comparison of costs and benefits. It is

likely that it would be quite difficult to measure either costs or benefits, but behaviour in actual markets may provide some indication of which is larger.

In considering the benefits and costs of disclosures, it is important to distinguish between the effects of the law and the effects of disclosures themselves. To do otherwise would presume that no disclosure occurs except in the presence of the law. Disclosures have obvious benefits for the consumer. Consumers can decide to repair or not with knowledge of repair costs. Consumers can shop around for competitive bids and choose among firms on the basis of price or other aspects of the bid. Finally, through some type of binding estimates, consumers may transfer risk to the shop. The costs of disclosures are the costs of diagnosing the malfunction at an early stage in the repairs, predicting the time required for repairs, communicating with the customer and bearing risks in some cases.

What can be said of the relationship between the costs and benefits of disclosures? It might be argued that if the benefits of disclosures did exceed the costs, disclosures should emerge as a consequence of voluntary transactions. (Note that there is no presumption here that the repair provided for in an estimate is the "correct" repair. Our evaluation pertains to the effect of having the price and quantity of proposed repairs announced to the customer before repairs begin. The proposed repair may well be fraudulent.) Consumers would choose to patronize only shops that made such disclosures or to patronize nondisclosing shops only at a substantially lower price. Under these circumstances, firms would find it in their interest to adopt the disclosure policy. Of course, if the potential returns from fraud are large enough, some nondisclosing shops might survive from the business of occasional customers who are not sufficiently aware of the consequences of nondisclosure. Still, we would expect that disclosure would be the dominant practice if benefits actually did exceed costs.

Can we conclude from this that the benefits of disclosure are less than the costs? Probably not. First, it is not clear that disclosure is not dominant. Several specialized chains advertise that they provide guaranteed estimates before repairs begin. Many repair firms function in a manner similar to that specified by disclosure laws, providing estimates and obtaining authorization by phone whenever additional repairs are required. The legal standing of these estimates may be doubtful or poorly understood by consumers, but repair shops may behave as if they were binding. Second, it is possible that there are high costs, in the present legal environment, of providing an estimate

that the consumer will value as a binding one. If present legal institutions do not recognize the contract, if the contract is enforceable only through costly litigation or if such a contract would require detailed specification, binding estimates might not emerge as standard business practice even if the direct benefits exceeded the direct costs.

The effect of disclosure laws will depend upon the deviation of required behaviour from the status quo. If most shops are already making the required disclosures, both the costs and benefits are likely to be small. Costs would be largely nuisance costs as shops now complying with the spirit of the law adjusted so as to comply with the letter of the law. Administrative and enforcement costs may also be significant. Benefits may result from eliminating or altering the behaviour of deviant firms if their deviance was associated with fraudulent activities. Another potential benefit is that the value consumers place on these estimates may be increased if these estimates are given some formal legal standing.

If disclosures are not common in the absence of laws that require them, then benefits and costs of disclosure laws are virtually identical to the benefits and costs of disclosures themselves. Obviously, the direct administrative costs of enforcement and administration must be added to get total costs.

Several features of the actual institutions adopted in various states seem to be desirable. First, exemptions for very small repairs seem advantageous, since diagnosis and reporting costs could easily be as high as the cost of the actual repair in these cases. Also, the upper bound for the disclosure exemption would provide a constraint on the price charged. Second, the option to obtain telephone approval for additional repairs would reduce the costs of compliance. Finally, a waiver option would assure that the disclosure requirement does not impose costs in inappropriate cases (custom or high-risk repairs). Under a waiver option, the customer merely signs a statement that he chooses to release the shop of its obligation to provide an estimate. Shops that found the cost of compliance to be too high could merely opt out by obtaining waivers for all repairs. However, customers would be informed that some shops do provide estimates. In this way the disclosure law would eventually be put to a market test.

Nongovernment Institutions

The theoretical analysis in Chapter II identifies a potential for market failure in the auto repair industry. The consumer's lack of information and consequent reliance on the producer for diagnosis may cause both inefficiencies and inequities. However, the institutional environment that produced those results was an extremely and artificially simple one: individual specialized firms contracting with individual consumers for a single repair on a fee-for-service basis. Real world adaptations to technology will in fact be much more intricate than that. This section discusses briefly just a few of the possibilities. Examples of these adaptations are extended warranties, chain stores, department stores and tie-in sales.

Formal analysis of any of these institutions would be reasonably challenging; however, certain generalizations are possible. Each of the institutional adaptations are attractive to firms in this industry precisely because of the potential for deception. If all consumers, or some significant subset of all consumers, expect on average to pay something more than the competitive price when dealing with conventional firms, then an innovating firm can expect to make profits if it can provide assurances that the customer can purchase repairs at a price between the competitive price and the price that consumers expect to pay.

Perhaps the most significant recent development in this industry is the extended warranty. With an extended warranty, the consumer pays a single lump sum at the beginning of the warranty (usually at the time of purchase). In exchange the consumer is insured against repair expenses for a specified period. These extended warranty agreements are perhaps best thought of as insurance policies, and the theoretical analysis of insurance in general applies quite readily here. Issues such as moral hazard and adverse selection are undoubtedly crucial in determining the nature of the warranty. However, an additional advantage of these agreements stems from the potential for misleading practices. The consumer, now insured against repair costs, has little incentive to monitor charges. The third party, however, be it an insurance company, manufacturer or retailer, will have an incentive to monitor expenses. It is likely that such expert review will offer a more significant deterrent to misleading practices than the inexpert review of consumers themselves. Of course, when warranties are provided by the producer of repair services, the incentive for fraud and overprescription, as defined in Chapter II, is eliminated (although, of course, other difficulties may arise). Most extended warranties presently offered are pro-

vided by the manufacturers themselves, which have both the expertise in the specific models being warrantied and some control over their dealers.

The rise of specialized repair chains, or franchise organizations, may also be explained in part by the potential for problems in this industry. A specialized chain may profit if it can accumulate a reputation for fair practices. Here the franchising firm has an incentive to monitor the behaviour of the franchise operator in order to preserve the value of the brand name. The usual specialization of these chains may be explained by the advantages of carefully engineered and routinized tasks. However, this specialization also constrains the behaviour of the franchisee and facilitates monitoring of performance. The involvement of many department stores may be explained in a similar fashion. A department store buys and sells a broad range of products with fairly little in common and lends its brand name to each. The consumer may perceive that the possible loss of reputation is a significant deterrent to deceptive practices. Given these assurances the department store may find automobile repair to be a profitable entry even if it avoids deceptive practices entirely. Of course, with each of the institutional arrangements, entry should occur until profits, in the economic sense, are zero.

A variety of tie-in sales may also function to diminish the importance of the information problem. For example, one is a closed-end lease, in which the dealer-owner provides maintenance. Most leases, however, are open-ended, in which the consumer provides preventative and corrective maintenance. Informal tie-ins, such as automobile dealers and neighbourhood gas stations that also provide repair, may be more important. In both these cases the tie-in is used rather loosely, since there is no formal contractual tie. However, the consumer may purchase cars or gasoline from a dealer in order to create a condition in which the dealer has a lot to lose from deceptive practices with respect to repair. Thus the folk wisdom of buying gas from one dealer, getting to know him and then using him for repair business may be a fairly sound practice. (This presumes that $P > MC$ for the tied good, as would be the case for monopolistic competition.)

For each of these institutions, there are alternative explanations for their existence. However, an interesting phenomenon that does provide empirical support for these explanations is that repair organizations that are

completely unaffiliated with some other business are extremely rare. Those true independents that do exist very often specialize in foreign or "enthusiast" automobiles. A reasonable conjecture is that a significant share of the owners of these automobiles are knowledgeable about cars and do not require brand name affiliation.

Chapter V

POLICY IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

This chapter is a discussion of recommendations for both policy and future research. In order to pursue that discussion, it is first necessary to identify and integrate some of the broad themes that are in the preceding chapters.

The theoretical segment of this study contains several distinct propositions, which are listed at the end of Chapter III. Taken together these results suggest that the equilibrium effects of deceptive practices are not straightforward, and that appearances may be somewhat deceiving. Entry of firms and price adjustment repeatedly enter the analysis so as to falsify simple interpretations of market conditions. So, for example, the overstatement of required repair times by flat-rate manuals is shown to have no effect without an associated agreement to fix prices. The models presented by no means suggest that the automobile repair market functions like the idealized competitive market of economics textbooks in which agents have perfect information. On the contrary, problems of excess capacity and redistribution in the auto repair market may follow from the opportunity for deception, except in unusual circumstances. What this research does demonstrate is that the relationship between deceptive statements and consumer losses is not direct, and that care must be taken in assessing the magnitude of the departure from a theoretical ideal of the performance of this industry.

The empirical presentation (Chapter III) relies on the theoretical chapter both for motivation and specification. The preference for data reflecting actual market outcomes follows from a number of the concerns raised in Chapter II. In particular, the extent of consumer loss due to overprescription will depend on the nature of consumer demand for repairs. Further, the theoretical concerns explain, in part, the discrepancy between the results presented here and the results of previous experimental studies. Aside from these specified points, however, the empirical presentation serves as a test of the major theme of the theoretical chapter as characterized above. The finding that consumer losses are smaller than had previously been suspected is consistent with the position taken here that past studies have relied to their detriment on an extremely narrow view of market processes. While the results of this study do not prompt a conclusion that problems are absent

from this industry, they certainly suggest that previous studies have been inadequately specified and interpreted without sufficient caution.

The estimates provided in this study indicate that consumers do not spend a lot more on auto repair than we would expect them to spend, given plausible objectives in terms of durability and performance. For reasons explored at length in Chapter III, this cannot be taken as a demonstration that consumer problems are absent. The obvious problems of measurement, as well as the difficulty in general of drawing conclusions from expenditure data, impose a rather wide confidence interval. Further, these results provide no consideration of search costs, which may be imposed on consumers. But these results are sufficiently strong to cast doubts on the conventional wisdom. If validated by subsequent research, these results would be of considerable policy significance.

Since this study breaks new ground and provides results that conflict with previous work, it would be premature to advocate any particular long-term approach for policymakers in this area. However, this study is not empty for purposes of policy, since it stands in obvious contradiction to a widespread view that strong reform measures are called for. The results presented here suggest that policymakers "tread lightly," at least for the time being. For whatever reasons, consumers appear to be able to avoid much of the potential abuse in this industry. Given the nature of the industry, reform measures are likely to be very costly, and the potential benefit of reforms may not be as great as had previously been thought.

In spite of the tentative status of these results, it is appropriate to consider what policy measures would follow, should confirmation be forthcoming. A number of interpretations of the performance of the industry are consistent with a finding that direct consumer losses are between 3 and 5 per cent of total expenditure. One plausible characterization, which may be confirmed or refuted by future investigations, is the following. The overwhelming portion of output is produced by firms that cater to a local clientele, rely on repeat business, reputation, etc., and as a result avoid deceptive practices. Losses are confined to a small number of transactions in which the loss is large relative to the total value of the transaction. (The alternative, small losses on every transaction, is considered below.) If this characterization can be verified, appropriate policy measures would be confined to those which combat the worst abuses. Disclosure laws would seem to be

desirable under these circumstances. However, greater enforcement of existing business practice legislation might also provide a remedy.

If, on the other hand, losses occur as a result of small losses on each transaction, it seems unlikely that reform measures would be cost effective. Any sort of extensive supervision or monitoring of the industry is likely to be very costly, and justifiable only if total consumer losses were found to be quite large. Where small total losses are spread out over a large number of transactions, costs of detecting abuses and correcting behaviour are likely to overwhelm even potential benefits.

Some of the concerns for future research are fairly obvious, given the discussion above. It would clearly be desirable to seek confirmation or contradiction of this study through examination of any additional data sources that can be identified. Many of the questions raised in the empirical section do have empirical solutions. So, for example, it would be useful to know more about the life expectancy of automobiles in Canada and how that varies with regard to economic variables. Similarly, it would be useful to know more about the typical ownership history of a Canadian automobile -- how many times does the typical vehicle change owners and what is the role of retailers in such transactions?

The theoretical models presented here are artificially simplified but do succeed in demonstrating the difficulty in predicting the effects of deceptive practices. Nonetheless, it would be interesting to develop these models further by examining the impact of relaxing some of the restrictions that have been imposed. Such extensions of the model might allow for specialization of shops into different classes (honest, dishonest) or allow producers to classify customers into groups according to their average knowledge of automobiles (men, women; white collar, blue collar; etc.). The abstract nature of this work may dictate that government agencies may not wish to pursue this research directly but instead may wish to wait for progress along these lines from more strictly academic pursuits. There is certainly considerable risk as to whether such modelling will yield results with any practical application. It must be noted, however, that the problems that remain to be modelled are central to virtually all of the consumer issues that have been referred to collectively as "deceptive practices." Thus a case can be made for further research in spite of the risk mentioned here. At the very least, policymakers should seek to remain informed of academic developments in this area.

For the most part, further research on the effect of institutions would naturally await confirmation of the empirical characteristics of the status quo. There are a couple of exceptions. The operation of provincial licensing schemes could usefully be examined at this time. Of special interest is the question of whether the operation of the apprenticeship system introduces barriers to entry. Also, the effects of new legislation in Quebec should be followed. The disclosure provisions that have been introduced may be of great interest to the other provinces.

The development of this study and associated discussions with officials of Consumer and Corporate Affairs Canada have resulted in the identification of a number of additional consumer issues pertaining to automobile repair. Among these issues are the following:

1. Is there significant monopoly power in the supply of repair parts and does that monopoly power result in consumer losses?

2. Does modular construction of major components (exhaust systems, for example) result in additional repair costs that exceed savings in manufacturing?

3. What is the effect of new technologies on industry structure? For example, will fuel injection systems, computer diagnostic systems, etc., force out everyone but factory-affiliated agencies?

4. Do manufacturers have incentives to produce vehicles with appropriate reliability?

5. Do manufacturers honour new-car warranties?

6. Can the emerging extended-warranty industry lead to increased concentration in the repair industry?

7. What are consumer losses due to tariffs and nontariff trade barriers?

8. Are repairs made under insurance excessively costly? What incentives are there in this area for both overprescription and monitoring of performance?

Many of these issues are not unique to the automobile repair industry nor do they follow from the basic informational problem that has been considered in this study. These issues are not addressed in the empirical portion of this research. That is, the consumer losses estimated in Chapter III are in addition to any losses due to the factors listed above.

There is no presumption here that these eight items require public action. For some issues the potential problem may be only that. In others the cost of a remedy may exceed the harm being done. For still others, such as tariffs, the consumer losses that exist may have been determined as the acceptable cost of government policies pertaining to income redistribution.

It is worthwhile to repeat two warnings before closing. First, the results presented in this study should not be interpreted to suggest that consumers should diminish their caution in purchasing automobile repairs. If desirable results are being achieved in this industry, it may be largely due to the conscious efforts of consumers to seek reputable firms and avoid abuses. Second, these results should not be taken by public authorities to imply that individual complaints against repair firms are invalid. Even if total losses are in the range of 3 to 5 per cent, if those losses are concentrated into a very small fraction of all transactions, the loss to specific individuals may be quite large.

Appendix A

PROVINCIAL LAWS PERTAINING TO AUTOMOBILE REPAIR*

Introduction

A search of the statutory provision of each of the ten provinces revealed that consumer protection legislation concerned with auto mechanics falls into three major categories: (1) general business practices legislation:[1] in this category are the statutes under which a consumer can arguably obtain redress for actions of mechanics where such actions meet the definition of the prohibited act as specified

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* This appendix was researched and authored by Tim Price of the University of Western Ontario, under the editorial supervision of Stephen Margolis.

1. The following statutes fall within this category:

   (a) The Business Practices Act, 1974, S.O. 1974, c. 131 (hereinafter called Ontario Act).

   (b) Trade Practices Act, S.B.C. 1974, c. 96 (hereinafter called B.C. Act).

   (c) Business Practices Act, S.P.E.I. 1977, c. 31 (hereinafter called P.E.I. Act).

   (d) The Trade Practices Act, S.N. 1978, c. 10 (not proclaimed in force at time of writing) (hereinafter called Newfoundland Act).

   (e) The Trade Practices Inquiry Act, R.S.M. 1970, c. T110 (hereinafter called Manitoba Act).

   (f) The Unfair Trade Practices Act, S.A. 1975(2), c. 33 (hereinafter called Alberta Act).

   (g) Consumer Protection Act, S.Q. 1978, c. 9 (not proclaimed in force at time of writing) (hereinafter called Quebec Act).

in the statute; (2) specific legislation protecting consumers involved with auto mechanics;[2] and (3) general statutory provisions anticipating regulations governing garages.[3] Such measures empower provincial authorities to pass regulation governing the industry. Also discussed below are statutory provisions having an incidental bearing on the subject of auto repair and consumer protection.

General Business Practices Legislation

General business practices legislation is the legislative category into which most of the provinces have channelled legislative efforts.[4] This section argues the applicability of business practice legislation to automobile repair and offers comparisons of the various provincial statutes. It should be noted that, while the acts are all strikingly similar, there are slight differences in the wording of each, with the result that consumers in certain provinces seem to be protected against a wider range of activities than consumerss in other provinces. It has been suggested that the various provincial trade practices statutes have been influenced to some extent by various American legislative models.[5] Professor Belobaba of Osgoode Hall Law School suggests that "the most influential American model"[6] was the Uniform Consumer Sales Practices Act.[7] An

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2. The only statute falling into this category is the Quebec Act.

3. In this category have been included:

   (a) Motor Vehicle Act, R.S.N.B. 1973, c. M-17, s. 59 and
   (b) Highway Traffic Act, R.S.P.E.I. 1974, c. H-6, s. 53.

4. It is of some interest to note that New Brunswick, Saskatchewan and Nova Scotia do not have any legislation of the type in this category at present.

5. Belobaba, Unfair Trade Practices Legislation: Symbolism and Substance in Consumer Protection (1977), 15 Osgoode Hall L.J. 327 at 333.

6. Id. at 334.

7. Uniform Consumer Sales Practices Act (Uniform Laws Annotated): Business and Financial Laws, Master Edition 7A, West Publishing Co.

examination of the Act reveals that it indeed does seem to lie at the heart of the business practices legislation, at least to the extent that it is relevant for our purposes.

Definitions

1. Ontario. It is argued that auto repair in Ontario is covered by The Business Practices Act.[8] Under the Act, a "consumer" is defined as "a natural person but does not include a natural person...carrying on business."[9] Therefore, a person who takes his auto to a mechanic, as long as he is not acting in the course of his business, is probably a "consumer" under the Act. A "consumer representation"[10] is defined as meaning a

> representation, statement, offer, request, or proposal (i) made respecting, or with a view to the supplying of goods and services, or both, to a consumer, or (ii) made for the purpose of, or with a view to, receiving consideration for goods or services, or both, supplied or purporting to have been supplied to a consumer.

Undoubtedly, it would be the mechanic who would make any representations to a consumer who seeks his services. Thus, in order to fall into the definition in the Act, the mechanic must make his representations, etc., to the consumer with the idea in mind that the consumer will utilize the services of the mechanic, or with the idea in mind that he will be paid for any services he renders. It is submitted that since the basis of the mechanic's business is the repairing of automobiles for remuneration, any representations, etc., that he makes to a consumer are most likely to fall into the definition of "consumer representation."

"Goods" are defined in the Act as including "chattels personal or any right or interest therein."[11] This, it is submitted, would clearly include automobiles. "Services" are defined as including, inter alia, "services provided in

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8. S.O. 1974, c. 131.

9. Id., s. 1(b).

10. Id., s. 1(c).

11. Id., s. 1(f).

respect of goods or of real property."[11] Since "goods" have already been defined as arguably including automobiles, it is submitted that any repair work done by a mechanic on an automobile would fall into the definition of "services." Therefore, it is submitted that, when a person takes a car to a mechanic to be repaired, and the mechanic tells the person that there is something wrong with the car, this transaction falls within the ambit of The Business Practices Act of Ontario.

2. British Columbia. Under the B.C. Trade Practices Act,[13] a "consumer" is defined as "an individual, other than a supplier, who participates in a consumer transaction."[14] Unlike Ontario, where a consumer might fall under the Act merely by being alive, in British Columbia two additional requirements are imposed. First of all, the "individual" must not be a "supplier." "Supplier" is defined as, inter alia, a "person, other than a consumer, who in the course of business"[15] is involved in various ways with consumer transactions. Thus it is seen that a person using a mechanic during the course of business is not a "consumer." Therefore, any other individual going to a mechanic for repairs is a "consumer," as long as he is not acting in the course of his business. Under the B.C. Act, a "consumer transaction" is defined as including, inter alia, "a supply of any kind of personal property...or services...to an individual for purposes that are primarily personal, family or household."[16] Arguably, encompassed within this definition is the supply of repair services to the auto of an individual. A question might arise as to whether or not the repair of an auto is "for purposes that are primarily personal, family or household," but it is submitted that each person who is not in business most likely uses his car for personal purposes, so that the repair of a person's car is a supply of services for purposes that are primarily personal.

"Services" are defined as meaning "services that are the subject of a consumer transaction, either together with, or separate from, any kind of personal property,

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12. Id., s. 1(i).

13. S.B.C. 1974, c. 96, as am.

14. Id., s. 1(1).

15. Id.

16. Id.

whether tangible or intangible."[17] Tying this definition in with that of "consumer transaction," it is submitted that repair work performed upon an auto by a mechanic, whether or not accompanied by the installation of new parts, falls within the definition of "services," and therefore falls within the intent of the Act. Therefore, it is submitted that a transaction whereby a person takes an auto to a mechanic for repairs is a transaction intended to be covered by the legislation in British Columbia.

3. Prince Edward Island. The definitions of "consumer,"[18] "consumer representation,"[19] "goods"[20] and "services"[21] in the Business Practices Act of Prince Edward Island are identical with the definitions of the same words in the Ontario Act, and therefore all arguments and discussions under Ontario are applicable here as well.

4. Newfoundland. The definition of "consumer"[22] in The Trade Practices Act of Newfoundland is identical with that found in both Ontario and Prince Edward Island. "Consumer transaction" is defined as meaning, inter alia, "a contract for the provision of services for a consideration."[23] "Services" are defined as meaning "services provided to a consumer for himself, his family, or household that are provided for the maintenance or repair of goods...owned by a consumer."[24] "Goods" are defined as meaning "chattels personal or any right or interest therein that are to be used by a consumer for himself, his family or household."[25] It is submitted that an automobile falls into the definition of "goods," as it is a chattel personal. Thus, by incorporation, any work done on an automobile would fall into the

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17. Id.

18. Business Practices Act, S.P.E.I. 1977, c. 31, s. 2(a).

19. Id., s. 2(c).

20. Id., s. 2(f).

21. Id., s. 2(i).

22. The Trade Practices Act, S.N. 1978, c. 10, s. 2(a).

23. Id., s. 2(b)(ii).

24. Id., s. 2(f)(i).

25. Id., s. 2(d).

definition of "services," as long as they are "provided for the maintenance or repair" of the automobile, and the car is "owned by a consumer." Lastly, it is submitted that a mechanic is a "supplier" under the Act, for a "supplier" is defined as "a person who in the course of his business offers...the sale of...services to a consumer, or who engages in a consumer transaction with a consumer."[26] Therefore, again, it is submitted that repair work done by a mechanic for a consumer falls into the purpose and intent of the Newfoundland Act.

5. Alberta. The following definitions under The Unfair Trade Practices Act[27] of Alberta are pertinent. A "consumer" is defined as meaning, inter alia, both "a person who receives or has the right to receive goods or services or both under a consumer transaction"[28] and "a person who is or may become obligated at law to pay all or part of the consideration under a consumer transaction by a supplier or to otherwise compensate a supplier for goods or services or both, whether or not he is the recipient of or has the right to receive the goods or services."[29] A "consumer transaction" is defined as "an agreement or arrangement under which services are provided for consideration."[30] "Goods" are defined as "chattels personal or any right or interest therein that are to be used by an individual for purposes that are primarily personal, family, or household."[31] An argument can well be made that an automobile falls into this definition, as it is a "chattel personal," and in most cases it is used primarily for purposes that are "primarily personal, family or household." "Services" are defined as including, inter alia, "services provided in respect of the maintenance or repair of goods."[32] Clearly, repair services on an auto would fall into this definition.

Therefore, a person who goes to an auto mechanic is a "consumer" and is purchasing "services" in a "consumer

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26. Id., s. 2(g).

27. S.A. 1975(2), c. 33, as am.

28. Id., s. 1(a)(i).

29. Id., s. 1(a)(iii).

30. Id., s. 1(c)(ii).

31. Id., s. 1(f).

32. Id., s. 1(g)(i).

transaction." Any work the mechanic might do to the car is work done upon "goods" of the customer. Lastly, it is arguable that a mechanic falls into the definition of "supplier" under the Act. This includes "a person who in the course of his business becomes liable under a consumer transaction...to provide services"[33] and "a person who receives or is entitled to receive all or part of the consideration paid or payable under a consumer transaction, whether as a party thereto or as an assignee or otherwise, or who is otherwise entitled to be compensated by a consumer for goods or services or both."[34] Clearly, this latter definition could arguably include a mechanic who is employed by someone with whom the "consumer" enters into a "consumer transaction," as he is "entitled to receive all or part of the consideration paid or payable under a consumer transaction...otherwise..." If not, then at the very least his employer would be liable under this definition as a "supplier."

6. Manitoba. The Manitoba Trade Practices Inquiry Act[35] is drafted in a different form from all the other trade practices statutes. It will therefore be discussed separately below.

7. Quebec. The Quebec Consumer Protection Act[36] is drafted in such a way that it is broken down into various "titles." Title II is "Business Practices." The pertinent definitions applicable to that title are: "consumer," who is defined as "a natural person, except a merchant who obtains goods or services for the purposes of his business."[37] "Merchant" is defined as including "any person doing business."[38] This

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33. Id., s. 1(h)(i).

34. Id., s. 1(h)(iii).

35. R.S.M. 1970, c. T110.

36. S.Q. 1978, c. 9 (not yet proclaimed in force).

37. Id., s. 1(e).

38. Id., s. 1(p), para. 2.

may not include an employee mechanic, but certainly must include his employer.[39]

Prohibited practices. The following is a discussion of the substantive acts that are called, under the various Acts, either "unfair practices" or "deceptive practices." Certain of these practices are common to all of the Acts and will be discussed in relation to all Acts at once. Others vary slightly from province to province, and will be dealt with separately.

1. Representations that goods are new when they are not. This is a general phrasing of the more exact and specific language found in the various sections. In Ontario[40] and Prince Edward Island[41] the section reads: "For the purposes of this Act, the following shall be deemed to be unfair practices: a representation that the goods are new, or unused, if they are not or are reconditioned or reclaimed, provided that the reasonable use of goods to enable the seller to service, prepare, test and deliver the goods for the purpose of sale shall not be deemed to make the goods used for the purposes of this subclause." In British Columbia the section reads: "one or more of the following, however expressed, constitutes a deceptive act or practice: A representation that the subject of a consumer transaction is new or unused, if it is not, or if it is deteriorated, altered, reconditioned or reclaimed."[42] Unlike Ontario and Prince Edward Island, which deem the practices mentioned to be unfair, British Columbia defines a deceptive act or practice as "any oral, written, visual, descriptive, or other representation, including non-disclosure, or any conduct, having the capability, tendency, or effect of deceiving or misleading a person."[43] Thus any statements by a mechanic that would mislead the consumer would be deceptive practices

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39. If, because a "merchant" may not include an employee mechanic, the title "Business Practices" is held not to apply to transactions between consumers and mechanics concerning auto repair, the consumer in Quebec is still specially protected by other, more relevant sections of the Act (see note 2, supra). This special protection is discussed below.

40. Ontario Act, s. 2(a)(iv).

41. P.E.I. Act, s. 3(a)(iv).

42. B.C. Act, s. 2(3)(e).

43. Id., s. 2(1)(a), (b).

under the British Columbia statute. In Newfoundland the section reads: "An unfair trade practice, for the purposes of this Act, is any representation, conduct, or failure to disclose material facts that has the effect of deceiving or misleading a consumer, and without limiting the generality of the foregoing, includes...a representation that the goods are new or unused if they are not, or if they are reconditioned, reclaimed, altered or deteriorated."[44] Under the Alberta Act, the section reads: "For the purposes of this Act, the following are unfair acts and practices: a representation that goods are new if they are not; a representation that goods are new if they are deteriorated, altered, reconditioned, or reclaimed."[45] Under the Quebec Act, the section reads: "No merchant...may, falsely, by any means whatever...hold out that goods are new, reconditioned, or used to a specific degree."[46] What these various sections clearly contemplate is that the mechanic (in our specific case) shall not inform the car owner that he has installed a new part if he has not done so and, indeed, he may not even say that a replaced part is "new" if in fact it is "reconditioned." Often, auto repairers do replace parts with rebuilt parts, or parts from wrecked cars. The repairer must be exact when he informs the consumer as to what he has replaced on the vehicle, or else he may be engaging in an unfair practice.

2. Representations of unnecessary repairs. In all of the Acts, the repairer must not specify to a consumer that work must be done or parts replaced if in fact this is not necessary. This goes to the very heart of our examination regarding auto repairers. In Ontario,[47] British Columbia[48] and Prince Edward Island[49] the section is worded as follows: "a representation that a service, part, replacement or repair is needed, if it is not" is an unfair or deceptive practice. In Newfoundland[50] and Alberta[51] the section is

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44. Newfoundland Act, s. 5(1)(f).

45. Alberta Act, s. 4(1)(d)(v), (vi).

46. Quebec Act, s. 221(e).

47. Ontario Act, s. 2(a)(ix).

48. B.C. Act, s. 2(3)(k).

49. P.E.I. Act, s. 3(a)(ix).

50. Newfoundland Act, s. 5(1)(m).

51. Alberta Act, s. 4(1)(d)(xii).

worded: "a representation that a part, replacement, repair or adjustment is needed if it is not" is an unfair practice. In Quebec the section reads: "No merchant...may falsely, by any means whatever,...hold out that goods or services are necessary in order to replace a part or make a repair."[52] Clearly, these sections go to the very root of many complaints about auto repairs. If a person is being told that repair work is needed when it is not, or parts must be replaced when in fact no such parts are needed, the person making such a statement or representation is engaging in an unfair practice. Under the comments that accompany the draft Uniform Consumer Sales Practices Act,[53] the authors have stated the following about the analogous section in that statute: "This subsection forbids such conduct as misrepresenting that a television picture tube must be replaced, or that a roof needs repair."[54] One may argue that this section also encompasses false representations by auto mechanics about auto repairs that are unnecessary.

There are also additional prohibited acts or practices found in the Alberta, Newfoundland, B.C. and Quebec Acts that are not found in either the Ontario or P.E.I. Acts.[55] Charging more than the estimate given, without consulting the consumer before proceeding, is prohibited in these four provinces. Under the B.C. Act, the section reads:

> Where an estimate or quotation of the price of a consumer transaction is materially less, as determined by the regulations, than the price of the consumer transaction as subsequently determined or demanded by the supplier, and the supplier has proceeded with his performance of the consumer transaction without the express

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52. Quebec Act, s. 222(e).

53. Supra, note 7.

54. Id. at 8, comment re: subsection (b)(7).

55. The list of prohibited acts in all of the enumerated Acts is quite extensive. However, the focus here is on those specifically named acts or practices that arguably extend to auto repair situations. For reference to the complete list of prohibited acts or practices, the reader should refer to the specific Act.

> consent of the consumer, [the supplier has engaged in a deceptive act or practice].[56]

Under the Newfoundland Act, the section reads: "the giving of an estimate or evaluation of the price of goods or services that is materially less than the price subsequently determined or demanded, if the supplier has proceeded with the performance of the consumer transaction without the express prior consent of the consumer."[57] Under the Alberta Act, the section reads:

> Giving an estimate or quotation of the price of the goods or services which is materially less than the price of the goods or services as subsequently determined or demanded by the supplier, and the supplier has proceeded with his performance of the consumer transaction without the express consent of the consumer.[58]

To fall afoul of these sections, the mechanic would have to meet two criteria: (1) The price ultimately charged would have to be "materially" greater than the estimate originally given. In British Columbia that is to be defined by regulation. In Newfoundland and Alberta it seems to be a question that would have to be determined either by those administering the Act, or the courts. (2) The repairer must have proceeded with the repairs beyond the estimate price without the "express consent" of the consumer. Thus the consent may not be implied by silence on the part of the consumer. Rather, he must state clearly that he is authorizing the additional work.

In Quebec a roughly analogous section reads: "No merchant, manufacturer, or advertiser may, by any means whatever, charge, for goods or services, a higher price than that advertised."[59] This, however, deals with general advertisements to the public, so the section may well be circumvented by not advertising any price for repair work until the nature of that work has been ascertained.

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56. B.C. Act, s. 2(3)(p).

57. Newfoundland Act, s. 5(1)(s).

58. Alberta Act, s. 4(1)(d)(xvii).

59. Quebec Act, s. 224(c).

Under the Newfoundland Act, there is an additional prohibition not found in the other Acts. It reads: "a representation that repairs have been made or parts installed if such is not the case"[60] is an unfair practice. Thus if a mechanic were to tell a customer that he has performed certain work that in fact he has not performed, he is in breach of the Act.

When unfair practices may occur. In the Alberta, B.C. and Newfoundland Acts, there is specific mention of when a prohibited act may arise. The B.C. Act reads: "A deceptive act or practice by a supplier in relation to a consumer transaction may occur before, during, or after the consumer transaction."[61] The Newfoundland Act reads: "An unfair trade practice may occur before, during or after a consumer transaction, notwithstanding that the consumer transaction is not completed and no consumer has suffered loss or damage."[62] The Alberta Act reads: "An unfair act or practice may occur in the course of inducing persons to enter into a consumer transaction, notwithstanding that the consumer transaction is not completed or did not take place."[63] There is no specific time provision in Ontario or Prince Edward Island as to when an unfair practice may occur.

Contracting out of the Act. The Acts of Ontario,[64] British Columbia,[65] Prince Edward Island,[66] Newfoundland,[67] Alberta[68] and Quebec[69] all prevent the merchant, supplier, etc. (including therein, it is submitted, a mechanic) from contracting out of the provision of the Act.

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60. Newfoundland Act, s. 5(1)(n).

61. B.C. Act, s. 2(2).

62. Newfoundland Act, s. 5(2).

63. Alberta Act, s. 4(2).

64. Ontario Act, s. 4(8).

65. B.C. Act, s. 28.

66. P.E.I. Act, s. 5(8).

67. Newfoundland Act, s. 3(1).

68. Alberta Act, s. 20(1).

69. Quebec Act, s. 261.

Remedies available to the consumer for breach of the Act[70]

1. Ontario. The relevant section of the Ontario Business Practices Act reads:

> Subject to subsection 2 [not relevant for our purposes], any agreement, whether written, oral or implied, entered into by a consumer after a consumer representation that is an unfair practice, and that induced the consumer to enter into the agreement, (a) may be rescinded by the consumer, and the consumer is entitled to any remedy therefore that is at law available, including damages; or (b) where rescission is not possible because restitution is no longer possible, or because rescission would deprive a third party of a right in the subject matter of the agreement that he has acquired in good faith and for value, the consumer is entitled to recover the amount by which the amount paid under the agreement exceeds the fair value of the goods or services received under the agreement, or damages, or both.[71]

It is arguable that in most consumer-mechanic repair situations, the conditions under section 4(1)(b) would not exist, as third-party purchasers are not likely to intervene, and restitution should be possible in almost all cases because what the consumer is most likely going to want is his money returned to him and there will be no need for restitution if the action is for work not performed, but paid for. Therefore, section 4(1)(a) is the most likely recourse that the consumer will seek to obtain. This section gives the consumer the right to rescind the contract,

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70. It should be noted that under all of the Acts there are various administrative remedies available. These, however, are directed to the public in general, and are sought under the actions of the appropriate civil servant responsible for the various Acts. The focus of this paper is on remedies available directly to the consumer. For the specific administrative remedies available in each province, the reader is advised to refer to the appropriate Act. The reader may also wish to refer to the sections in each Act that contain penal provisions for breach of the Act.

71. Ontario Act, s. 4(1)(a), (b).

and he may then rely on the common law of contract or tort to seek damages. It should be noted, though, that by implication of section 4(2) of the Act, wherein it is declared that the court can award "exemplary or punitive damages" if the unfair practice is "an unconscionable consumer representation"[72] (unconscionability is defined and restricted by the Act), the consumer may not be able to obtain punitive damages from the mechanic for his misrepresentation, or breach of contract. Therefore, in Ontario, the consumer may well be restricted to recovering any money paid unnecessarily to the mechanic or, at most, to recovering all moneys paid under contract, where rescission is obtained.

If the situation were to arise where the consumer sought rescission and restitution was not possible (e.g., where the mechanic had indeed done more than make false statements to the consumer and had installed parts on the car unnecessarily and disposed of the original parts), it is arguable that section 4(1)(b) of the Act would apply, and the consumer would be restricted in his remedy to recovering only any excess moneys he had paid to the mechanic, or damages of some nature. In that situation, he would not be able to recover all that he had paid under the contract. However, it is submitted that a court might well award damages in that case in such amount as would reimburse the consumer for the full amount paid under the contract.

2. Prince Edward Island. The relevant section[73] of the P.E.I. Act is identical in wording with the Ontario Act discussed above, so the same comments made there apply here.

3. British Columbia. Under the B.C. Act, "[a] consumer who suffers loss or damages in respect of a consumer transaction by reason of a deceptive or unconscionable act or practice of a supplier may bring an action against the supplier...for damages in the amount of the loss or damage."[74] However, the consumer is not restricted to ordinary damages in his action, as is evident from the following: "In an action brought under subsection (1) [above], the court may, in its discretion, award punitive or exemplary damages, or may pro-

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72. Ontario Act, s. 2(b) -- not relevant for our purposes.

73. P.E.I. Act, s. 5(1).

74. B.C. Act, s. 20(1).

vide equitable relief by way of rescission, or restitution, instead of, or in addition to, damages or such other relief that it considers just."[75]

From an examination of these two subsections, one notices that the right to recover in British Columbia is broader than in Ontario or Prince Edward Island. A court may award punitive damages when the deceptive act is not unconscionable,[76] while in Ontario and Prince Edward Island such damages are available only for unconscionable practices. Like Ontario and Prince Edward Island, however, the court may award both rescission and damages if it thinks such an award to be just. Alternatively, or in addition, it may order restitution. It is noteworthy that there are no restrictions on the right to seek rescission under the B.C. Act, as there are under the Ontario and P.E.I. Acts. Therefore, the consumer can probably recover both damages and have his contract rescinded in British Columbia. It is also noteworthy that the supplier can bring an action in British Columbia to rescind the contract, and can seek return of any moneys paid either by him or by the consumer, under the contract, where the consumer was induced to enter into a consumer transaction by a deceptive practice.[77]

4. Newfoundland. Under the Newfoundland Act, the consumer may bring an action where he "has entered into a consumer transaction with a supplier, and has suffered damages as a result of an unfair trade practice."[78] Under the Newfoundland Act, the section addressing remedies is drafted such that the court may award whatever type of damages, etc., that it considers proper. Among these are an award of "damages for any loss suffered by the consumer including exemplary or punitive damages."[79] The court "may make an order rescinding the consumer transaction,"[80] or it may "reopen the consumer transaction and repay the amount paid to the supplier by the consumer or relieve the customer from the payment of an amount in excess of the amount judged by

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75. Id., s. 20(2).

76. As defined in s. 3(2), B.C. Act.

77. B.C. Act, s. 21.

78. Newfoundland Act, s. 14(1).

79. Id., s. 14(2)(b).

80. Id., s. 14(2)(c).

the court to be a fair price for the consumer transaction."[81] These powers of the court are all cumulative in the sense that it may combine any of the remedies it wants. Therefore, the court may order the mechanic to repay the consumer and award damages, or it may find some work to be reasonable and order a return of any excess charged or it may fashion any combination of remedies as it thinks proper. Also, under the Newfoundland Act, the consumer is given further express rights to rely on any other cause of action he may have either at common law or under any other Act, and the remedies under The Trade Practices Act are in no way to limit any other available remedies.[82]

5. Alberta. Under the Alberta Act, a consumer may bring a court action where he has "entered into a consumer transaction, and in respect of that consumer transaction, has suffered damage or loss due to an unfair act or practice."[83] The action may be brought against "any supplier who engaged in or acquiesced in the unfair act or practice that caused that damage or loss,"[84] and the action may be brought "for relief from that damage or loss."[85] As in Newfoundland, the court has various powers to make awards for actions brought under the Act. It may "award damages for damage or loss suffered"[86] and/or "award punitive or exemplary damages"[87] and/or "make an order for (i) specific performance of the consumer transaction, or (ii) restitution of property or funds, or (iii) rescission of the consumer transaction."[88]

Therefore, under this Act a consumer who was told that a certain repair had been done could demand that it be done, if he so desired. It should again be emphasized that these remedies do not appear to be in the alternative, but

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81. Id., s. 14(2)(e).

82. Id., s. 14(4). There is a similar provision in the B.C. Act, s. 28.

83. Alberta Act, s. 11(1)(a), (b).

84. Id.

85. Id.

86. Id., s. 11(2)(b).

87. Id., s. 11(2)(c).

88. Id., s. 11(2)(d)(i), (ii), (iii).

rather appear to be cumulative, if the court so desires. One should note also that under the Alberta and Newfoundland Acts, as in the B.C. Act, the court may award punitive or exemplary damages even if there is not an unconscionable practice involved. Also, as in the Newfoundland and B.C. Acts, the remedies under the Alberta Act are in addition to, and not in substitution of, any other remedies a person has either at common law or under another statute.[89]

6. Quebec. Under the Quebec Act, "if the merchant...fails to fulfil an obligation imposed on him by this act or the regulations,"[90] the consumer has a right to demand "the specific performance of the obligation; that his obligations be reduced; that the contract be rescinded; or that the contract be set aside; or that the contract be annulled."[91] It is to be noted that all of the above remedies are in the alternative. However, in addition, the consumer may also claim damages or exemplary damages.[92] Again, the provisions of the Quebec Act are in addition to the provisions of any other Act "granting a right or a recourse to a consumer."[93]

Conclusion. Upon an examination of the various Acts that exist in the common law provinces and Quebec, a strong argument can be made that dealings between car owners and mechanics are covered by the general business practices legislation. While there are many different prohibited acts under the statutes, certain of them are more relevant to this topic than are the others. However, there may be protections arguably granted by the enumeration of other prohibited acts that were not discussed in this paper. Assuming that the scope of the prohibited acts includes mechanic representations about unnecessary repairs, etc., if the consumer believes these statements and relies upon them, paying money in good faith, he has not only a right to rescission of the contract in most cases, but also a right to claim damages and, in some cases, exemplary or punitive damages.

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89. Id., s. 20(2).

90. Quebec Act, s. 272.

91. Id., s. 272(a), (c), (d), (e), (f).

92. Id.

93. Id., s. 270.

Manitoba: The Trade Practices Inquiry Act.[94] Whereas the focus in the Acts in the other provinces is on consumer-supplier interaction directly, the Manitoba Act focusses more on public inquiry into trade practices and is not concerned with granting a remedy to any specific consumer who feels that he or she may have been the victim of an unfair business practice. The purpose of the Act is set out in the preamble, which reads:

> Whereas, it is deemed expedient in the public interest to make provision for the receiving of complaints respecting matters that may, from time to time, be alleged to exist in any trade, business, industry, pursuit, occupation, calling, profession, or activity, for inquiry into and concerning them and for regulating the prices, charged for any article or product, sold or provided in connection with any trade, business, industry, pursuit, occupation, calling, profession or activity.[95]

Under the Act, "trade" is defined as "any trade, business...calling...and includes an activity of any kind whatsoever carried on by any person or through which the support or patronage of the public is sought for any purpose."[96] The Act states that "any four persons, resident in Manitoba, of the full age of eighteen years"[97] may complain in writing to the appropriate minister if they have reason to believe "that any one or more persons carrying on or engaged in any trade in Manitoba...are making charges for... reconditioning, repairing...servicing...or in any manner whatsoever dealing in or with any article or product which is unfair or improper,"[98] or "that conditions of any kind

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94. R.S.M. 1970, c. T110.

95. Id., preamble, as am.

96. Id., s. 2(b).

97. Id., s. 3, as am.

98. Id., s. 3(a)(iii).

whatsoever exist or are prevalent in, or in the conduct, operation, or management of, a trade, whether involving one or more than one person engaged in or carrying on the trade, that are detrimental to...the public."[99]

These sections clearly anticipate that the focus of the Act is to be on public complaints about the manner in which a whole trade is conducting itself. Thus, if any four persons were to believe that mechanics were charging unfair or improper prices for repair work to cars, they could complain to the minister. The minister may undertake further investigation, and may either decide that a complaint is valid and bears further investigation, or is frivolous and ought to be dismissed.

The only remedy of any concern for the purposes of this study is that a Board of Inquiry may recommend that the price of a product or article be controlled, and the Lieutenant-Governor-in-Council, if he is of the opinion that the article or product is, inter alia, "essential in the day to day activities of a significant number of people in the province...may prescribe the maximum price that may be charged for the article or product by way of...service charge."[100] The trouble with this section is that one may be hard pressed to argue that repair services sold by a mechanic are an "article or product." If one is unable to establish this point, the Act may provide no remedy to those whose complaints deal with the service industry. Further, the central difficulty in auto repair is one of quantity and quality, not price. Regulating price may be impossible due to the difficulty in defining quantity. Thus one sees that the Manitoba Act is concerned with industry-wide inquiries and is not concerned with the individual consumer obtaining redress for an unfair trade practice. The Manitoba Act therefore stands apart from the general business practices Acts of the other provinces.

Specific Legislation Protecting Consumers Dealing with Auto Mechanics

As noted above (note 2), as of February 1980, the only province having legislation in this category is

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99. Id., s. 3(b).

100. Id., s. 11(2), as am.

Quebec. The Consumer Protection Act[101] contains a specific series of sections dealing with "Automobile and Motorcycle Repairs."[102] (Title II of this Act was discussed above as a general business practices Act.)

Definitions. Under this legislation, a "merchant" is defined as "a person who carries out repairs for remuneration."[103] "Repairs" are defined as "work carried out on an automobile, except work determined by regulation."[104] Under regulations promulgated under the Act, the following are declared not to be repairs within the definition above: "work costing a total of $50. or less, including the price of parts and labour; installation of tires on or a battery in an automobile or motorcycle if purchase and installation are included on the same bill."[105] To the date of writing, these are the only exceptions from the definition of "repair."

Substantive provisions. There are a number of requirements dealing with the matter of an estimate. The merchant must give the customer a written estimate before he carries out any repairs.[106] This obligation can be waived only if the customer writes out and signs, himself, a waiver form releasing the merchant from the obligation to provide a written estimate.[107] Where the repairs are done for free, no estimate is required.[108] The merchant cannot charge for an estimate unless he so advises the consumer in advance, and tells the consumer the price he will charge for making the estimate.[109] If it is necessary to disassemble the car or

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101. S.Q. 1978, c. 9.

102. Id., ss. 167-181.

103. Id., s. 167(a).

104. Id., s. 167(b).

105. Laws and Regulations (G.O. Quebec), Dec. 17, 1979, vol. 2, no. 34, pg. 6821.

106. Quebec Act, s. 168, para. 1.

107. Id.

108. Id., para. 2.

109. Id., para. 3.

part thereof in order to make an estimate of repair, the amount mentioned in the estimate that must be given under the Act must include the cost of reassembly if the consumer decides not to have the repairs carried out.[110] It must also include the costs of labour and of any part used to replace a part that was destroyed during disassembly.[111] The estimate must also include: (a) the consumer's and the merchant's name and address; (b) the make, model and registration number of the car; (c) nature and total price of repairs to be made; (d) the part that is to be installed, as well as a description of whether it is a new, used, retooled or reconditioned part; and (e) the date and duration of the estimate.[112]

The estimate must be accepted by the consumer before the repairer can proceed and, once accepted, is binding on the merchant (i.e., no additional costs may be added to the prices quoted in the estimate for the repairs specified therein).[113] If, during the authorized work, the merchant discovers any further repairs that must be carried out, he is not to proceed and complete those further repairs unless he has the express authorization of the customer.[114] If the merchant does obtain verbal authorization for such further repair, he must record it in the estimate and must also indicate the date, the time, the name of the person giving such authorization and, if applicable, the telephone number dialed to reach that person.[115]

These sections therefore deal quite extensively with the matter of estimates. It should be noted that, unlike those business practices statutes which make it an unfair practice to charge "materially" more than the estimated price,[116] under this legislation no work not mentioned in the estimate may be undertaken without further consent. This would, by inference, include even a minor

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110. Id., s. 169.

111. Id.

112. Id., s. 170.

113. Id., s. 171.

114. Id., s. 172, para. 1.

115. Id., s. 172, para. 2.

116. Supra, notes 56, 57 and 58.

charge that, under the business practices statutes, would not be "materially" more expensive and would therefore not fall afoul of those statutes.

The Act gives further protection to the consumer. When the repairs are finished, the consumer must be given a bill containing the following information:

(a) the names and addresses of the merchant and the consumer;

(b) the make, model and registration number of the car;

(c) the date the car is returned to the consumer and the reading on the odometer at that date;

(d) the repairs carried out;

(e) a listing of all parts installed, their prices, and an indication of whether each part is new, used, retooled or reconditioned;

(f) the cost of the labour per hour, the number of hours of labour billed and the total labour cost;

(g) the total of paragraphs (e) and (f) as cost to the consumer; and

(h) the characteristics of the warranty.[117]

It should be noted that the Act does not specify whether the repairer must charge for hours actually worked or whether he can rely on flat-time books such as Chilton's.

The repairer must also hand over any parts replaced during repairs when he returns the car to the consumer, if the consumer asked for these parts at the time he requested the repairs to be made.[118] Thus, if the consumer first asks to see the parts when he picks up his car, he apparently cannot force the repairer to show them to him, and the repairer is under no obligation to retain the parts. There are exceptions to this requirement. The repairer does not have to return the parts replaced, even if requested to do so, where:

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117. Quebec Act, s. 173(a)-(h).

118. Id., s. 175.

(a) the repairs are carried out without charge;

(b) the part is exchanged for a retooled or reconditioned part; or

(c) the part replaced must be returned by the repairer to the manufacturer or distributor under a warranty contract.[119]

The repairer is under all of the above obligations even if he has subcontracted out part of the work.[120] This could lead to problems. For instance, the Act does not specify that the subcontractor is under any obligations vis-à-vis the consumer. If he replaces parts beyond the original estimate without the knowledge of the original contractor, is the original contractor to be held in breach of his obligations under the Act? Alternatively, does the consumer have recourse against the subcontractor? Clearly, this matter should be dealt with further. Also, one might wonder how the repairer can give an estimate to the consumer if he must subcontract out the work in order to ascertain what is wrong with the car. This placing of the statutory obligations on the original repairer can have the effect of making the consumer return several times to the repairer for adjustments every time a new estimate must be undertaken, if the consumer wants the protection of the Act as to binding estimates. There is also a statutory guarantee on all repairs done on the auto, for the lesser of three months or 5 000 km, to take effect upon the delivery of the automobile to the consumer.[121] Again, the statute does not specify against whom the consumer is to have recourse if the faulty repairs were done by a subcontractor. The guarantee does not, however, cover damage that results after the repairs because of abuse by the consumer.[122]

Acceptance by the consumer of the estimate, or payment by him for repairs, does not prejudice his right to maintain an action against the repairer based upon:

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119. Id., s. 175(a)-(c).

120. Id., s. 174.

121. Id., s. 176.

122. Id., s. 177.

(a) the absence of prior authorization for the work;

(b) bad workmanship; or

(c) the price paid exceeding either the price indicated in the estimate or the total of the price indicated in the estimate and the price agreed upon when a change was authorized.[123]

Further, the repairer's right to retain the car until he has been reimbursed,[124] analogous to the possessory lien in common law provinces, does not apply where:

(a) no estimate was given before repairs were carried out;

(b) the total price of the repairs exceeds the price of the estimate, and the consumer pays the price indicated in the estimate; or

(c) the total price of the repairs exceeds the estimated price plus any authorized additional increase, and the consumer pays such total agreed-to price.[125]

Lastly, to inform consumers of the protections granted them under this Act, the merchant must post a sign in a conspicuous place in his establishment containing the principal provisions of the section.[126] The contents of the sign, its size, the material of which it is to be made and the type constituting the notice have all been prescribed by regulation.[127] Further, it should be noted that the civil recourses available to the consumer under the Act for breach of the business practices prohibitions are also available for breach of these provisions dealing specifically with auto repair.[128] Also, no action may be brought based upon

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123. Id., s. 178.

124. Quebec Civil Code, Article 441.

125. Quebec Act, s. 179.

126. Id., s. 180.

127. Laws and Regulations (G.O. Quebec) Dec. 17, 1979, vol. 2, no. 34, pg. 6821.

128. Quebec Act, s. 272.

breach of the warranty provided by section 176 (discussed above) beyond three months after discovery of any defect covered by that warranty.[129]

In conclusion, the legislature of Quebec has attempted to deal specifically with some of the major complaints concerning auto repairers in a specially enacted statutory provision. To date it is the only province to have done so, and even the provisions discussed have not yet been proclaimed in force. However, such an approach may be preferable to action under the general business practices statutes, which by their very nature must be worded broadly. It is submitted, however, that unless and until the other nine provinces tackle the problem in the manner that Quebec has used, the general business practices statutes probably do provide some protection to car owners who must deal with mechanics.

General Statutory Provisions Anticipating Regulations Governing Garages

This category, which is not to be extensively covered, in reality is just a potential area of regulation. Only two statutes were identified as falling into this category.

Under the Highway Traffic Act[130] of Prince Edward Island, there is a section that reads: "Subject to this Act, the Lieutenant-Governor-in-Council may from time to time make such rules and regulations and prescribe such fees as he may deem necessary or expedient for the licensing and regulation of garages."[131] Under the Motor Vehicle Act[132] of New Brunswick, there is a section that reads: "Subject to the approval of the Lieutenant-Governor-in-Council the Minister may from time to time make such rules and regulations and prescribe such fees and penalties as he may deem necessary or expedient for the licensing and regulating of garages and service stations."[133]

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129. Id., s. 275.

130. R.S.P.E.I. 1974, c. H-6, as am.

131. Id., s. 53.

132. R.S.N.B. 1973, c. M-17, as am.

133. Id., s. 59.

Unfortunately, a search was unable to turn up any regulations passed pursuant to these sections, but it is submitted that the sections are worded broadly enough to encompass consumer protection as a subject upon which rules may be made, and which the operator must adhere to as a prerequisite to obtaining, and a condition of keeping, his garage operator's licence.

Miscellaneous Provisions

Alberta: The Licensing of Trade and Businesses Act.[134] Section 6 of this Act reads: "The Lieutenant-Governor-in-Council may by regulation formulate codes setting up standards of ethics, methods, practices and systems applicable to all businesses or to any description or class of business to effect an end to or prevent competitive practices that are in their nature detrimental...to the public."

No regulations governing auto mechanics appear to have been passed pursuant to this Act, but it is submitted that the section contemplates the possibility of the Alberta government passing codes of practices similar to those found in the Quebec Consumer Protection Act.

Conclusion

This Appendix is a survey of the legislation in the various provinces of Canada that either does have or arguably could have a bearing on the matter of consumer-auto mechanic relations. It is submitted that the various general business practices statutes can have application to protect consumers against potential frauds when dealing with auto mechanics. An examination is also make of the unique provisions dealing directly with the issue of consumer protection and automobile repairs contained in the Quebec Consumer Protection Act, and a further brief submission is made on the potential applicability of certain other statutes to the matter under discussion.

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134. R.S.A. 1970, c. 207, s. 6, as am.

TABLE OF CONVERSION

1. Expenditure per kilometre = expenditure per mile x 1.609.

2. One mile = 1.609 km (kilometres).